

THE ARCHITECT & BUILDING NEWS

27 OCTOBER 1955 · VOL. 208 · NO. 17 · ONE SHILLING WEEKLY

- **BASILICA OF THE HOLY SEPULCHRE**
- **COMPTON HOUSE, OFFICE BLOCK**
- **CURRENT MARKET PRICES**

PUBLISHED IN LONDON SINCE 1854

Be right with

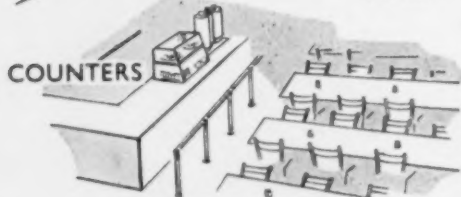
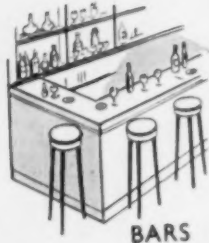
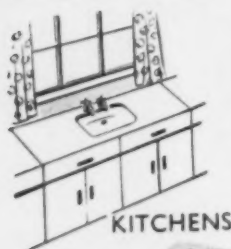


AT HALF THE PRICE
the new amazing

**PLASTIC
FACED
BOARD**



IDEAL FOR



FOR SAMPLES AND FULL INFORMATION WRITE DEPT. A.B.N.

REMEMBER the name **BERITE**. You'll be asked about it often from now on, for this plastic board, at a startlingly reasonable price, is unbeatable for—

• WEARABILITY !

The Plastic Face is washable, resistant to heat, alcohol and water. Can be cleaned by merely wiping. (Ideal for Shops, Fittings, Counters, etc.)

• COLOUR APPEAL !

In any of five linen pattern shades: pink, blue, grey, green, buff.

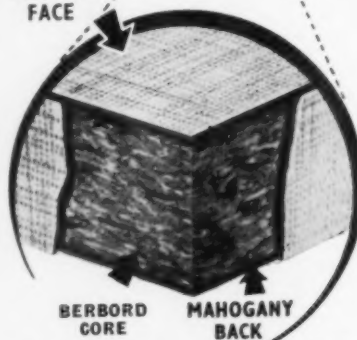
• ALL-ROUND CONVENIENCE !

BERITE can be cut, worked, drilled, nailed and screwed with ordinary tools. Its convenient thickness ($\frac{1}{4}$ " or $\frac{1}{2}$ ") saves plywood, bonding, etc.

STOCK SIZE SHEETS
8ft. x 4ft. and 4ft. x 4ft.

**FROM YOUR
MERCHANTS AND STOCKISTS**

**PLASTIC
FACE**



Hardwood, Berlam or other suitable Edging, as applied by consumers. Already bonded to a $\frac{1}{4}$ " and $\frac{1}{2}$ " backing at amazingly low prices.

And **BERLAM**, a plastic-finished sheet is obtainable separately—in a'n at exceptionally moderate prices!

Both **BERITE** and **BERLAM** respectively are offered at prices, to the best of our knowledge, far cheaper than any comparable material on the market to-day.

BERITE LTD Lammas Road · Lea Bridge Road · London E.10



Serviceable Floors *enhance Tea Centre service!*

Since it opened its doors ten years ago, two and a half million visitors have walked upon the friendly floors of the Tea Centre in London's Lower Regent Street, to enjoy hospitality made even more cosy and comfortable by its Armstrong Cork Tile Floors.

It is a remarkable testimony to the hard-wearing properties of Armstrong Cork Tile that this constant heavy traffic through the years has not impaired the rich natural beauty of its floors.



Kind to the feet and pleasing to the eye, Armstrong Cork Tiles for floors and walls make a perfect and durable setting for modern or traditional schemes of decoration and furnishing—at surprisingly low cost.

Sizes: 12"x12", 36"x12", 36"x6", 9"x9", 6"x6". Special sizes cut to order up to maximum of 36"x12". Thicknesses: 3/16" square edge or bevelled edge, 5/16" tongued and grooved or square edge. Shades: Light, Medium, Dark. Covered Skirting: 5/16" thick, in lengths of 36", 4" high, 1/4" radius cove.

CORK FOR WALLS: Yes!—Cork can be laid vertically, to form walls and dados of permanent beauty. And to aid soundproofing, with good thermal properties.

Armstrong CORK TILE Flooring



The Westbury Hotel, New Bond Street

Honeywell comfort in a modern hotel . . .

Air-conditioning in a modern hotel is no longer a luxury . . . it is a necessity. Patrons today are far more discerning than their predecessors in demanding this essential item of 'hotel service.'

The public rooms of the recently opened 'Westbury'—in New Bond Street—are served by five air-conditioning plants which were installed by Matthew Hall & Co., Ltd.

These plants are provided with fully automatic HONEYWELL electronic modulating controls. This simply means that day in . . . day out,

winter or summer, HONEYWELL controls keep the temperature and humidity at the required comfort-level . . . AUTOMATICALLY.

For more detailed information on HONEYWELL controls for all heating, ventilating and air-conditioning, please write to: Honeywell-Brown Ltd., 1 Wadsworth Road, Perivale, Greenford, Middlesex.

Sales Offices located in the principal cities of Britain and Europe; distributors throughout the world.



Tea Room



Dining Room

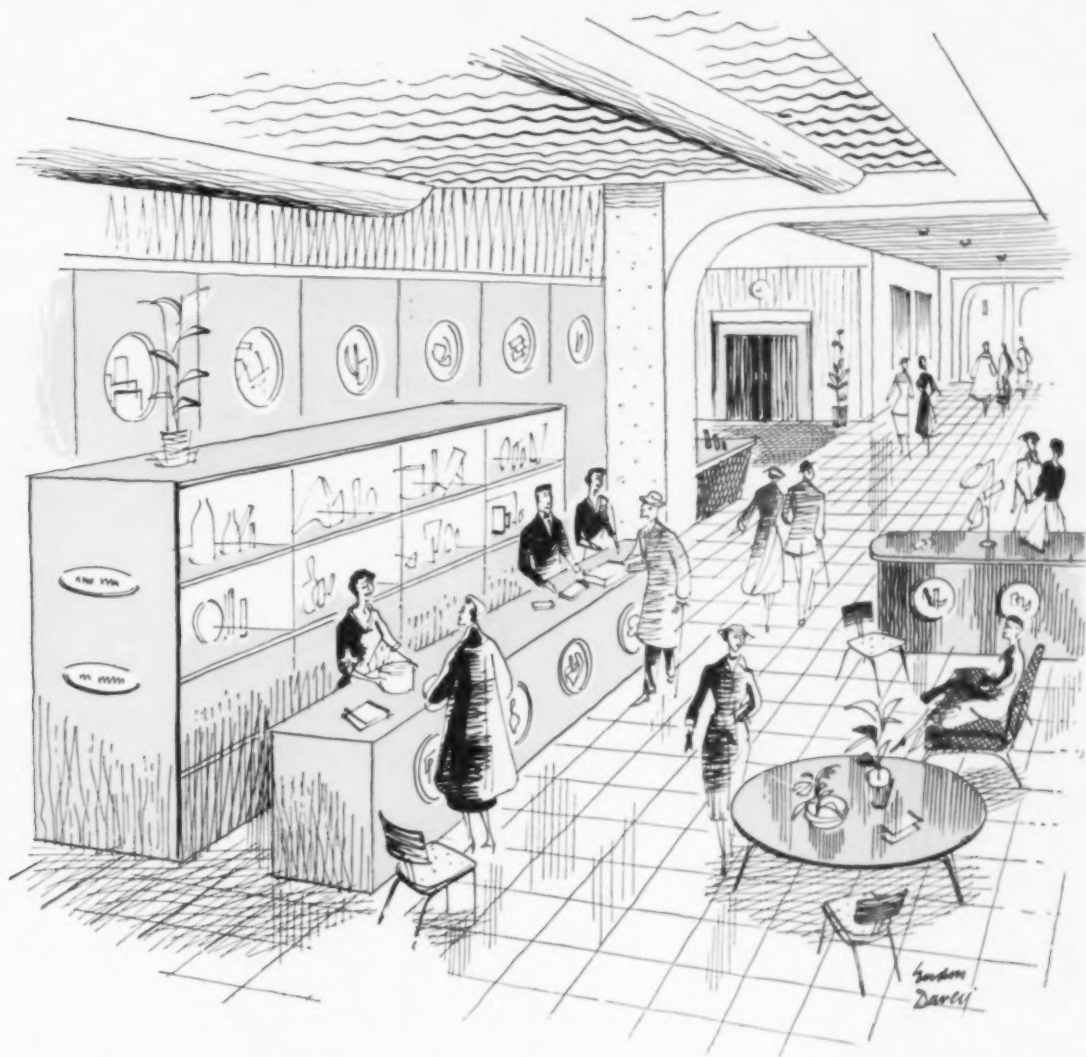


Electronic controls in plant room



Honeywell
BROWN INSTRUMENTS

First in Controls.



LASTING ELEGANCE



"DECORPLAST" the surfacing material that is so well known for its distinctive beauty is now available as an incorporated finish to the "HOLOPLAST" Structural Cavity Panel—combining the advantages of this form of construction with "built-in" decorative appearance—it is an ideal material for store and shop application both for economy and "eye appeal"—Please write for full particulars of this new decorative panel requiring no bonding.

'DECORPLAST'

DECORATIVE PANEL

MANUFACTURED BY

HOLOPLAST LIMITED Sales Office: 116 Victoria Street, London, S.W.1. VICTORIA 9354/7 & 9981
HEAD OFFICE & WORKS: NEW HYTHE, NEAR MAIDSTONE, KENT

Barry's Heavy Ruboleum

MONARCH OF THE LINOLEUM WORLD SINCE 1907



Reproduction of a RUBOLEUM Floor in a Food Store

HEAVY RUBOLEUM is a superfine linoleum 6.70 mm. thick (approx. $\frac{1}{4}$ "), was first produced by us in 1907, and still holds its position of the highest merit as a floorcovering because of its properties of hygiene, resilience, durability and decorative colourings.

HEAVY RUBOLEUM is produced in 35 beautiful and popular colours, plain and marble effects.

SAMPLES ON APPLICATION TO THE EXCLUSIVE MANUFACTURERS

BARRY, OSTLERE & SHEPHERD, LTD.
KIRKCALDY • SCOTLAND

HEAVY RUBOLEUM is especially produced for use on Ship decks and Public buildings. It is available through high-class retail Furnishers and Contract Flooring Specialists.

HEAVY RUBOLEUM is the solution to your flooring problems



Metal Windows

Wallspan Curtain Walling

Metal Doors

Aluminium

Metal Door Frames

Rotten Toilet Cubicles

Tally ho from Hants to Wilts

horseback. It is not that he despises motor cars—time was when he participated in junior car club rallies! But he keeps two horses and horses need exercise and riding is splendid exercise for a man. Mr. Wellesley-Davies, who manages the Southampton office which includes Hampshire, Dorset and Wiltshire, has been with Williams & Williams for over twenty years. He has an immense dislike of paper work and so gets through it with remarkable efficiency. In short, here is a man with a refreshing outlook on life. Worth meeting.

Do not be unduly surprised if Mr. Wellesley-Davies* visits your site on

* MR. G. WELLESLEY-DAVIES, WILLIAMS & WILLIAMS LTD.

22 Carlton Crescent, Southampton (26252).

Other offices at: Belfast (23762), Birmingham (Shirley 3064), Bristol (38907), Bromley (Ravensbourne 6274), Cardiff (27092), Crawley (2200), Glasgow (Douglas 0003), Hertford (3969), Leeds (21208), Liverpool (Central 0325), London (Sloane 0323), Maidstone (51750), Manchester (Blackfriars 9591), Newcastle-upon-Tyne (21353), Norwich (24393), Nottingham (52131), Reading (50291), Sheffield (51594).

METAL WINDOWS

WILLIAMS & WILLIAMS



Member of the Metal Window Association

CONCRETE CONTRIBUTIONS BY TWISTEEL

12-Storey Flats, Old Street, Finsbury. Architect: Joseph Emberton, F.R.I.B.A. Contractors for Reinforced Concrete: Holland & Hansen & Cubitts Ltd.

To make sure of the highest standards in concrete design and construction, at the lowest cost in steel, money and time, call in the TWISTEEL Design Service. Their specialist knowledge, backed by many years of practical experience, enables them to advise architects and engineers, with certainty, on every aspect of design and planning for every type of construction involving the use of reinforced concrete: and they can also supply the reinforcement.

TWISTEEL DESIGN SERVICE

43 UPPER GROSVENOR STREET, LONDON, W.1 · TELEPHONE: GROSVENOR 1216

AND AT BIRMINGHAM MANCHESTER GLASGOW

TRETOL INFORMATION SHEET

For Your Files

THE USES OF MORTAR PLASTICISERS

The need for reduced costs and greater efficiency is resulting in the increased use of mortar plasticisers throughout the building industry. This information sheet gives a brief description of the function of these workability aids.

THE THEORY governing mortars for brickwork is that the mortar joint should always be weaker than the brick, so that when thermal or moisture movement takes place in the structure as a whole, the joints craze or crack in preference to the possible formation of major structural cracks in the bricks.

To obtain this weak mortar joint it is necessary to use a mix with low cement and high sand content. These mixes easily become unworkable, particularly where sharp sands are used and it has been the practice in the past to recommend the addition of hydrated lime as a plasticising agent.

As, however, lime expands and cement contracts during hydration, two opposing stresses are set up in the mortar during the drying out and hardening processes and this is very largely the basic cause of the quite common crazing and movements of joints away from the brickwork. The development of mortar plasticisers now makes it possible to adopt lean cement and sand mixes without resorting to the addition of lime.

Underlying Principles.

Tretol Morta-Mix, the mortar plasticiser, works on the principle of entraining in a mix approximately 10 per cent more air than normal. This air is in the form of minute stable bubbles, and these, by reducing internal friction within the mortar, provide a marked improvement in plasticity and workability.

The air entrainment is obtained by a physical and not a chemical action and there is, therefore, no deleterious effect on the mortar. Tretol Morta-Mix removes surface tension from the gauging water and to a certain extent, acts as a lubricant for the sand.

Because of the air entrainment the mortar is given a minute cellular construction which provides more tolerance for movement within the mortar, thereby reducing cracking and crazing to a minimum. The thermal insulation provided by this cellular construction of the mortar prevents the penetration of frost beyond the initial face of the mortar or rendering and provides a high degree of resistance to damp penetration.

Mortars for brickwork.

By allowing the elimination of lime the use of Tretol Morta-Mix will enable typical mixes of 1:1:5 or 1:1:6 to be adjusted to 1:6 using, if preferred, coarse sharp sands; Mixes of 1:2:9 and 1:3:12 can similarly be adjusted to 1:8. In addition to easier flow, improved wetting properties of the mortar will be obtained, ensuring better bonding between brick and mortar joints, greatly reducing the tendency to crazing and shrinkage of the mortar joints.

External renderings.

Mixes of 1:6 as indicated for brickwork, using really coarse sharp sands, can well be employed with the aid of this plasticiser without the slightest objection being raised by plasterers. The renderings hang extremely well in their wet state and can be brought to a good finish without necessity for over-trowelling; thus avoiding bringing the 'fat' to the surface with resultant crazing. By the use of selected sands, and by employing these lean mixes, a valuable contribution is made towards reducing crazing and shrinkage cracks.

The plastic nature of the mix provided enables very easy working of surfaces to obtain texturing where necessary, also, by improved wetting, improved adhesion between thrown or embedded aggregate on to the surface of the final coat of rendering is obtained.

Internal cement renderings for backing coats.

The advantages gained by the use of lean mixes are particularly apparent on breeze blocks and other internal surfaces not possessing high physical strength. Renderings consisting of cement, sand and Tretol Morta-Mix only, eliminating completely the need for lime, will provide excellent backing coats for plaster finishes and will not cause any chemical reaction resulting in blowing, or other physical damage to the setting coats. This will apply to all typical plasters used for work of this nature, including Hemihydrates, Anhydrous, Anhydrites, Keenes, etc.

For further details please write for Tretol Morta-Mix leaflet CS/ABI



TRETOL HOUSE, THE HYDE, LONDON, N.W.9. Tel. Colindale 7223 (10 lines)



STRUCTURAL CONCRETETWORK

WOOLAWAY CONSTRUCTIONS LTD.

specialise in design, manufacture and erection of prestressed and reinforced concrete frames for many types of single storey building. This illustration shows the use of G.K.P. prestressed concrete trusses which span from 21'0" to 45'0". Early delivery and rapid erection can be arranged at economical prices. Tenders for complete buildings can also be submitted.

Please address enquiries to: STRUCTURES DIVISION
24 WEST BAY WORKS, BRIDPORT, DORSET
Telephone: Bridport 2327

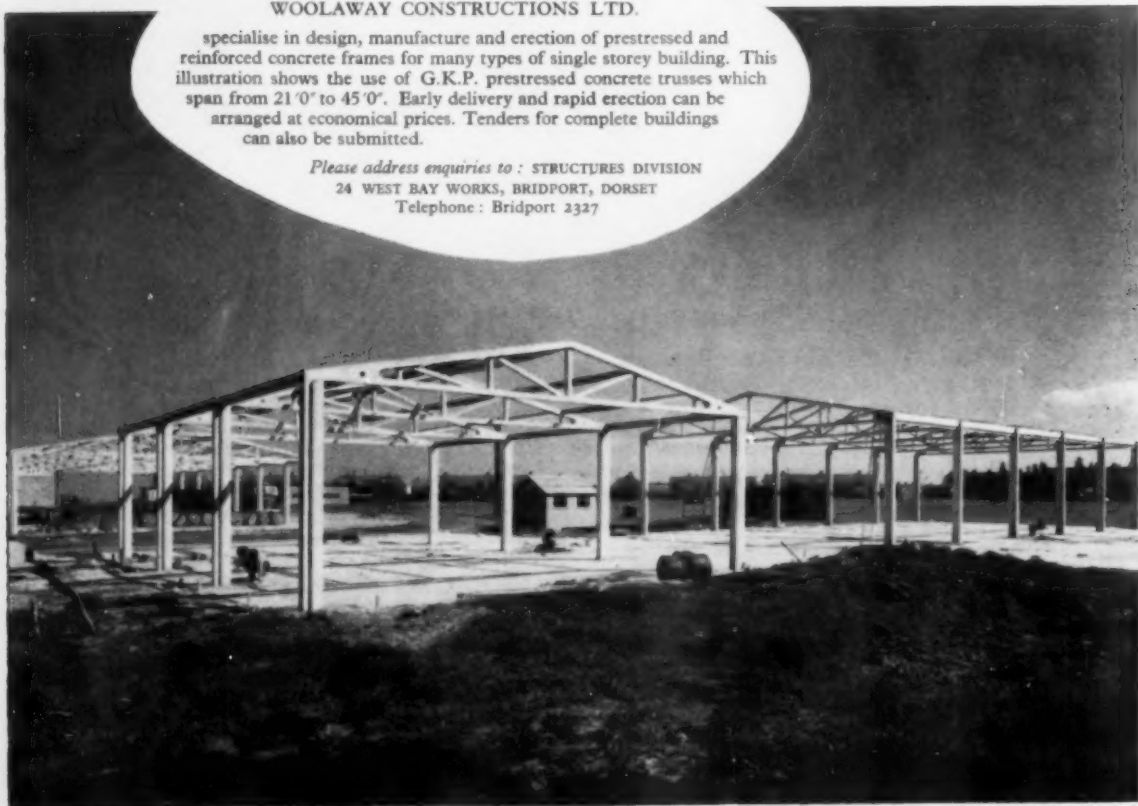


illustration by courtesy of British Cellophane Limited



"ESTATE"
FOR THE
HOUSE

ELLARD

SLIDING DOOR GEAR



"RADIAL"
FOR THE
GARAGE

FOR
HOUSING
ESTATES

FOR THE
PRIVATE
RESIDENCE

"ESTATE"
FOR THE
HOUSE



"RADIAL"
FOR THE
GARAGE



ELLARD Sliding Door Gear is ideally suited for use on large housing estates and for the distinctive private residence. ELLARD "Estate" Gear is silent—easy running—troublefree, and has elegant appearance. ELLARD "Radial" Gear for garages and out-houses, provides smooth-running action, gives maximum space, and is easy to fix. Both these well-known types of ELLARD Door Gear are moderate in price and immediate delivery can be obtained from large ironmongers and builders' merchants throughout the country.

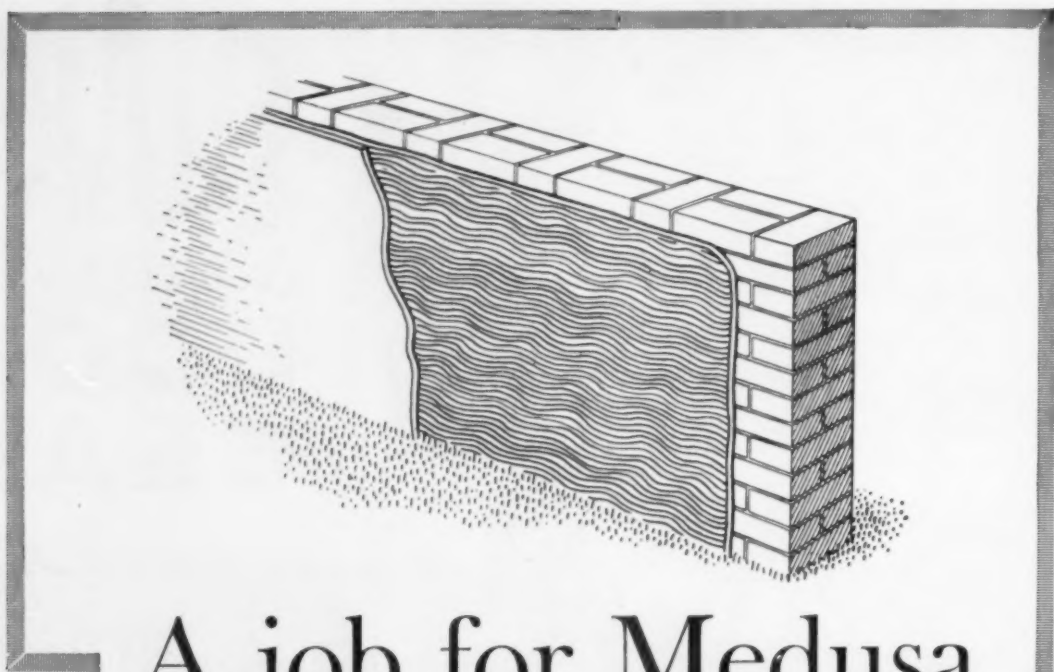
SEE OUR STAND

496 & 498

BUILDING EXHIBIT. OLYMPIA

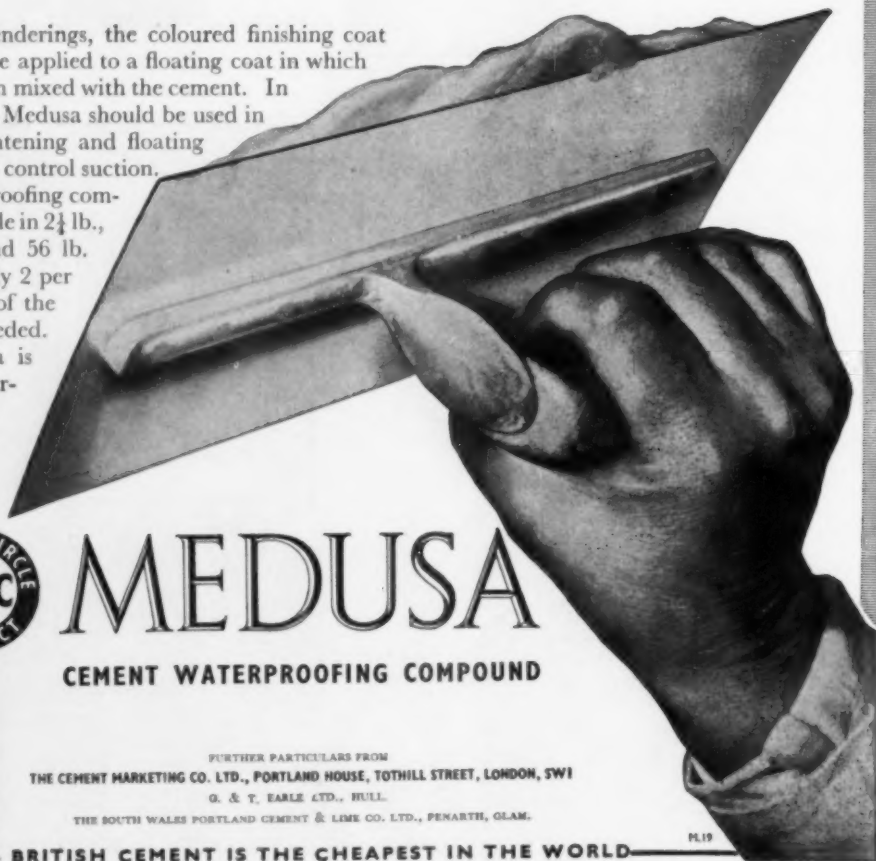
CLARKE ELLARD ENGINEERING CO. LTD.

WORKS ROAD · LETCHWORTH · HERTS · TELEPHONE 613/4



A job for Medusa

For coloured renderings, the coloured finishing coat should always be applied to a floating coat in which Medusa has been mixed with the cement. In three coat work Medusa should be used in both the straightening and floating coats in order to control suction. Medusa waterproofing compound is available in 2½ lb., 7 lb., 28 lb. and 56 lb. containers. Only 2 per cent by weight of the cement is needed. 2½ lb. of Medusa is sufficient to waterproof 1 cwt. of cement.



MEDUSA

CEMENT WATERPROOFING COMPOUND



FURTHER PARTICULARS FROM
THE CEMENT MARKETING CO. LTD., PORTLAND HOUSE, TOTHILL STREET, LONDON, SW1

G. & T. EARLE LTD., HULL.

THE SOUTH WALES PORTLAND CEMENT & LIME CO. LTD., PENARTH, GLAM.

BRITISH CEMENT IS THE CHEAPEST IN THE WORLD

PL19

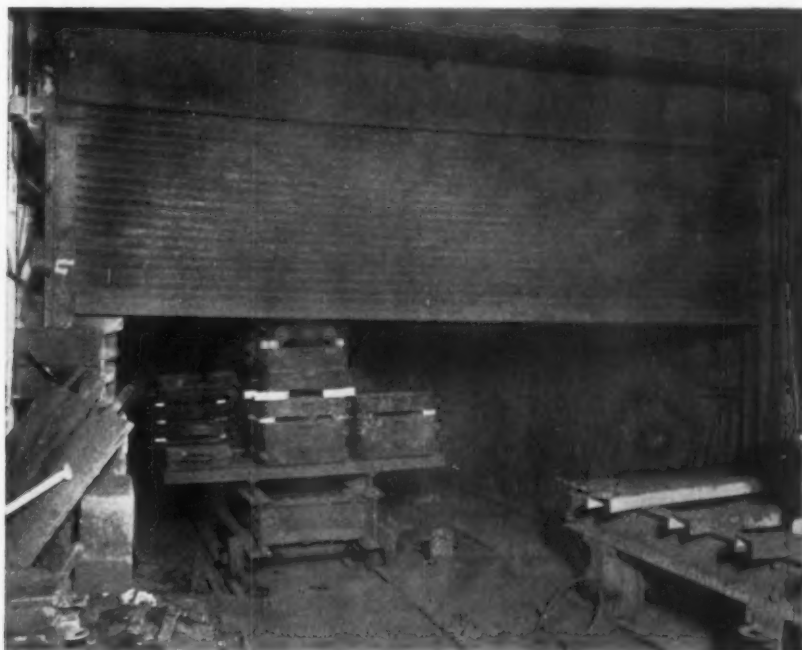
ARTHUR L. GIBSON & CO. LTD., TWICKENHAM, MIDDX.

we have a door

a door for everyday general use, designed to serve in openings that require a good closure, and to give a long service life with minimum maintenance costs. The door is a Kinnear rolling steel shutter. In the illustration a Kinnear shutter has been used as the door to a mould drying stove at Cardiff.

Tailored to exact requirements a Kinnear Steel Rolling Shutter will ensure economy of installation, trouble free operation whilst giving complete protection against intruders and the weather.

JOHN WILLIAMS AND SONS



When it comes to saving ways in doorways it is a wise move to call in Kinnear.

KINNEAR SHUTTERS AND GRILLES

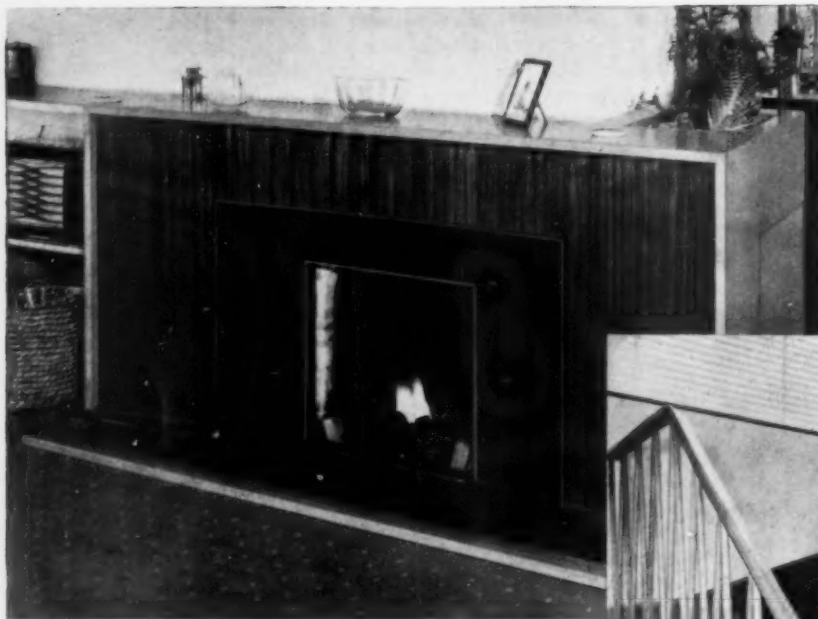
TELEPHONES : POPESGROVE 2276

BIRMINGHAM HIGHBURY 2804

GLASGOW HALFWAY 2928

MANCHESTER CENTRAL 1098

for FITTINGS & FURNISHINGS



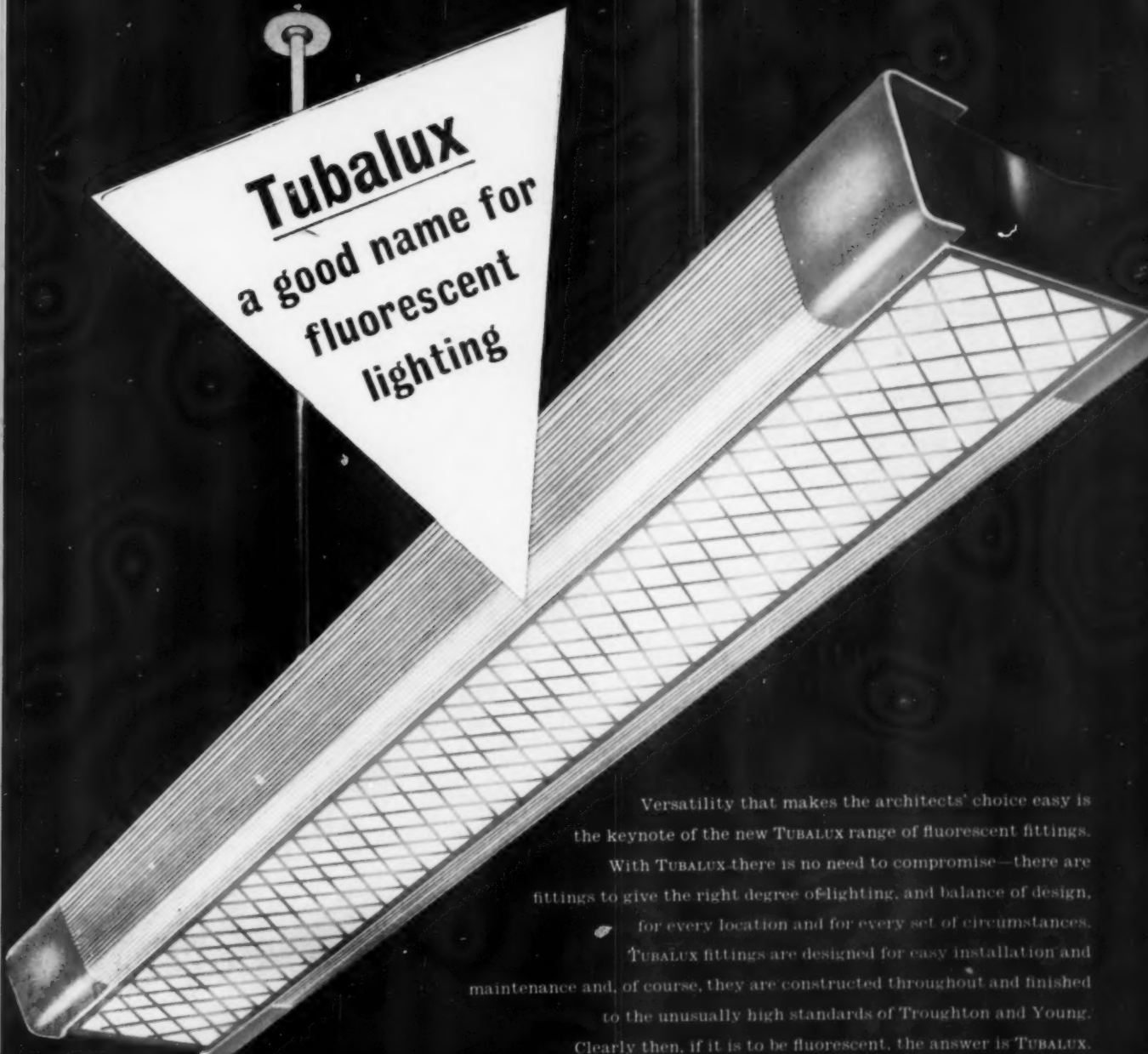
Architect: D. Mawson, A.R.I.B.A.

Contractor: R. C. Carter Ltd.



There is no more versatile material than wood for internal fittings and furnishings. T.D.A. can give scientific and technical advice on the choice and use of suitable species.

There's nothing like **WOOD**



Tubalux
a good name for
fluorescent
lighting

Versatility that makes the architects' choice easy is the keynote of the new TUBALUX range of fluorescent fittings. With TUBALUX there is no need to compromise—there are fittings to give the right degree of lighting, and balance of design, for every location and for every set of circumstances. TUBALUX fittings are designed for easy installation and maintenance and, of course, they are constructed throughout and finished to the unusually high standards of Troughton and Young. Clearly then, if it is to be fluorescent, the answer is TUBALUX.



TROUGHTON & YOUNG

TROUGHTON & YOUNG (Lighting) LTD THE LIGHTING CENTRE 143 KNIGHTSBRIDGE LONDON S.W.1 TELEPHONE KEN 3114

LIGHTWEIGHT**incombustible ceilings**

See us on

STAND No. C.42

at the

**BUILDING
EXHIBITION**

Modern methods, modern structures, demand lightness, and that is where ASBESTOLUX comes in. Lessening weight, lending itself to prefabrication, reducing costs by eliminating wet work . . . these are its strong points.

Lightness, strength and inertness are important: ASBESTOLUX has all these properties and — most important of all — incombustibility.

These ASBESTOLUX ceiling panels, screwed up to suspended tee sections, provide this big store with a strikingly accurate ceiling.



ASBESTOLUX ceiling panels screwed to suspended tee sections at the Lewisham branch of British Home Stores.

Ceiling contractors:
Tentest Fibre Board Company Limited

dry construction needs**ASBESTOLUX**

INCOMBUSTIBLE ASBESTOS INSULATION BOARD

THE CAPE ASBESTOS COMPANY LIMITED

114-116 PARK STREET · LONDON · W1 · Telephone: GROsvenor 6022

and at Blackfriars House, Parsonage, MANCHESTER 3 · Tel: Blackfriars 9355/6 · Eagle Buildings,
217 Bothwell Street, GLASGOW C2 · Tel: Central 2175 · 246a Corporation Street, BIRMINGHAM 4 · Tel: Central 8168



THE BUILDING EXHIBITION, OLYMPIA, LONDON
NOV. 16 - 30 1955

If you want to know about the latest developments in Roof Construction, you will easily find your way to

Stand No. 32/33 Row B.

where "BITUMETAL", Briggs Modern Development in Aluminium Roofing and "CHALLENGE" Multi-Layer Roofing are displayed in an interesting and informative manner.

Briggs Roofing Organization has the scientific resources and highly specialised knowledge to tackle new Roofing problems and to advise on more familiar ones.

BRIGGS

WILLIAM BRIGGS & SONS LIMITED

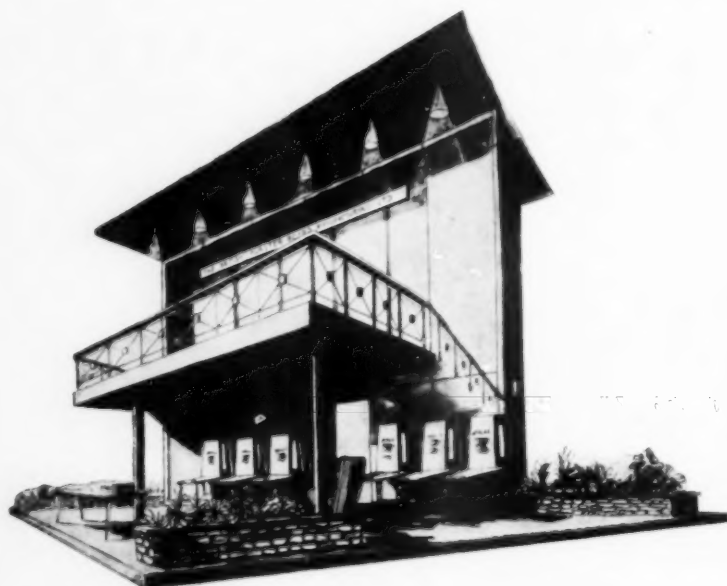
Vauxhall Grove, London, S.W.8

Head Office & Works: Dundee

Offices at: ABERDEEN-BELFAST-BRISTOL-DUBLIN-EDINBURGH-GLASGOW-LEICESTER-LIVERPOOL-NORWICH

STAND 94 ROW E

THE BUILDING EXHIBITION OLYMPIA



Architects, Builders and Surveyors are invited to discuss
with our technical representative any question relating to Plastering or Internal
Linings and Partitions. Our Stand will feature the application of 'Paramount' Dry Partition
as Internal Linings to Curtain Walling and demonstrate Thermal Insulation,
Fire Protection, Suspended Ceilings, Sound Control and Plastering. Technical Films
will be shown throughout the run of this Exhibition in the
Company's own Cinema.

THE BRITISH PLASTER BOARD (MANUFACTURING) LIMITED

BATH HOUSE, 82 PICCADILLY, LONDON, W.1

DOVE BROTHERS Ltd.
ISLINGTON



BUILDERS

OF

COMPTON HOUSE
WOOD STREET, E.C.2



New
Vestibule
Enclosure

SHOPFITTING

SIMPSON (PICCADILLY) LTD

The new Vestibule designed by Joseph Emberton F.R.I.B.A., comprises a long plate glass window framed in stainless steel and two pairs of Armourplate doors. An over-lapping canopy is decorated deep red and has inset lighting. This all glass enclosure is equipped with controlled heating, invites closer inspection of lower level sales area and gives greater freedom of movement to Shoppers during peak hours. Two display cases adjoining the travertine marble steps are incorporated in the scheme.

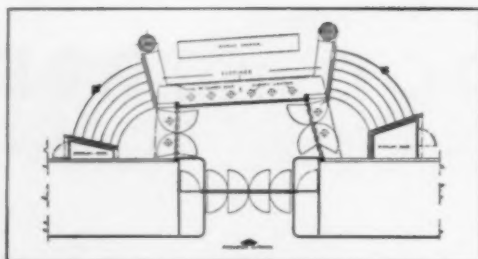
E. Pollard & Co Ltd

159 St John Street, London ECI

Tel: CLerkenwell 6701

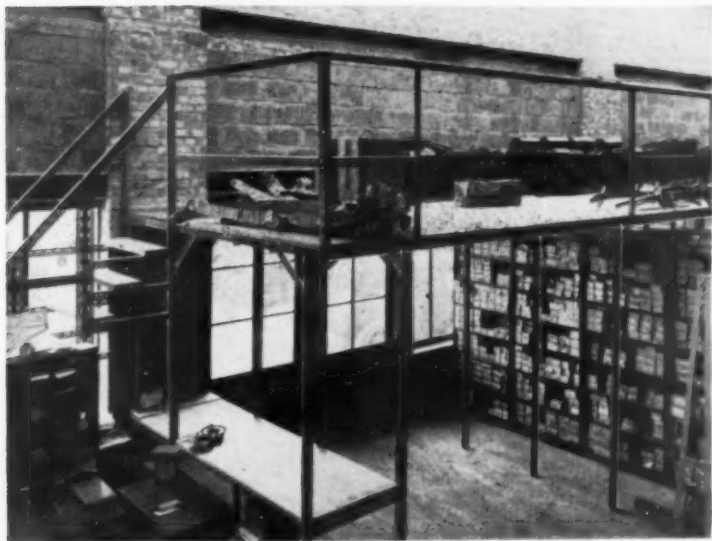


BY POLLARDS

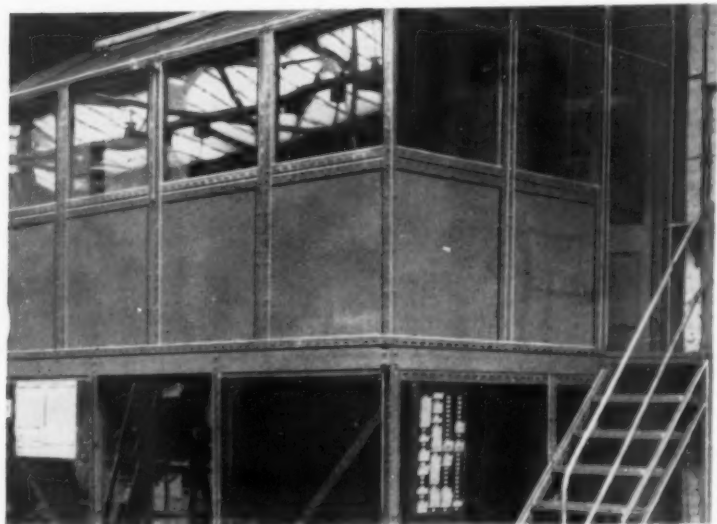


IT PAYS TO THINK OF DEXION

- at the planning stage



Service Depot builds storage platform. Iron Bridge Service Depot Ltd. of Southall, Middlesex, built this overhead storage platform to carry 20 tons of motor-car parts. It effects a big saving in space, and the supports also serve as dividers for storage bins. Storage structures of Dexion can make full use of any existing space; and they have the great advantage of ensuring easy adaptability to changing needs.



Machine Shop Engineer's office quickly built. Thomas Allan & Sons Ltd. of Thornaby designed this office with tool store underneath to be built with conventional materials. They used Dexion instead when they found it was quicker and cost less. In jobs of this sort, Dexion invariably supersedes old-fashioned materials and methods.

A FACTORY LAYOUT must be flexible, capable of being adapted at short notice to changing circumstances. This applies particularly to storage requirements and works equipment.

There is no more versatile material for building stores and equipment, exactly to your own designs, than Dexion Slotted Angle. Such Dexion equipment is quick and cheap to install. And any Dexion structure can be readily adapted and altered to meet changing needs. There is no waste, no scrap: Dexion is fully recoverable, and can be used again and again.

When you are planning the building and layout of a factory, Dexion deserves careful consideration at an early stage. This versatile material may bring about important economies, initially and for years to come.

A technical design and estimating service is available free; and for large installations, construction teams will carry out the work if required.

GET THE FACTS

Dexion 225 is sold in packets of ten 10-ft. lengths, complete with bolts. Steel Dexion (price from 1/3¹/₂ to 1/5 per foot) is rust-protected, stove-enamelled. Where a light but strong, non-magnetic, non-corroding material is required, use Alloy Dexion (full technical details and prices on request). Send today for sample piece of Dexion and illustrated booklet AN.144 showing many uses in industry. Dexion Ltd., 65 Maygrove Rd., London, N.W.6. (Telephone MAIda Vale 6031-9.)



DEXION

REGD.

SLOTTED ANGLE

THE **PLIMBERITE** **REBOND**

PARTITIONING SYSTEM

The photograph (below, left) shows PLIMBERITE Rebond Partitioning in the British Van Heusen Company's new factory at Bishops Lydeard, Taunton.

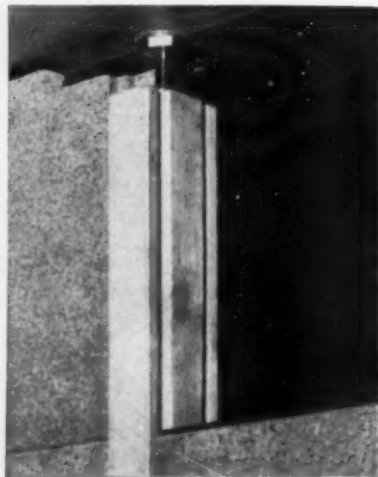
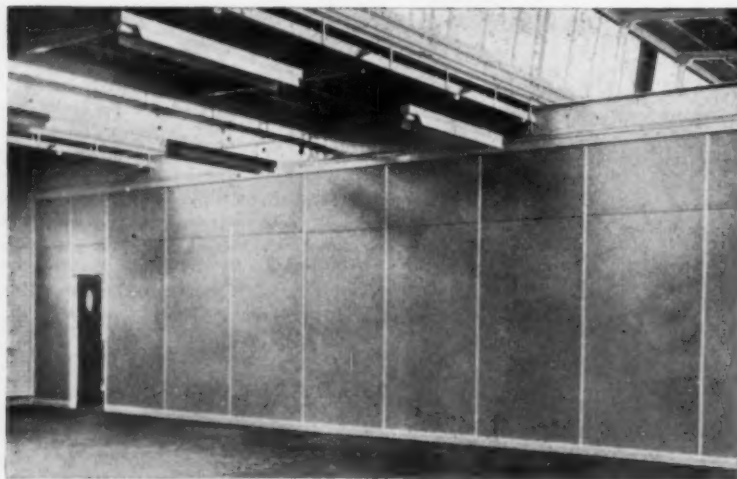
Architect: Steer & Shirley-Smith, A./A.R.I.B.A.

Contractor: Stansell & Sons (Taunton), Limited.

The System consists of timber posts at 4 ft. 1 in. centres, grooved to receive $\frac{3}{4}$ " PLIMBERITE boards whose vertical edges are rebated to form tongues which slot into the grooves in the posts. The posts are held in position on the floor by a pin, and at the top by the PLIMBERITE REBOND screw jack, as shewn in the photograph (bottom, right).

- Construction is "dry".
- No disturbance to existing floors and ceilings.
- Doors and glazing can be incorporated as required.
- Dismantling and re-erection elsewhere can be done with negligible damage or loss of material.

Full working details with constructional drawings are contained in the PLIMBERITE REBOND Booklet, which may be had on request.



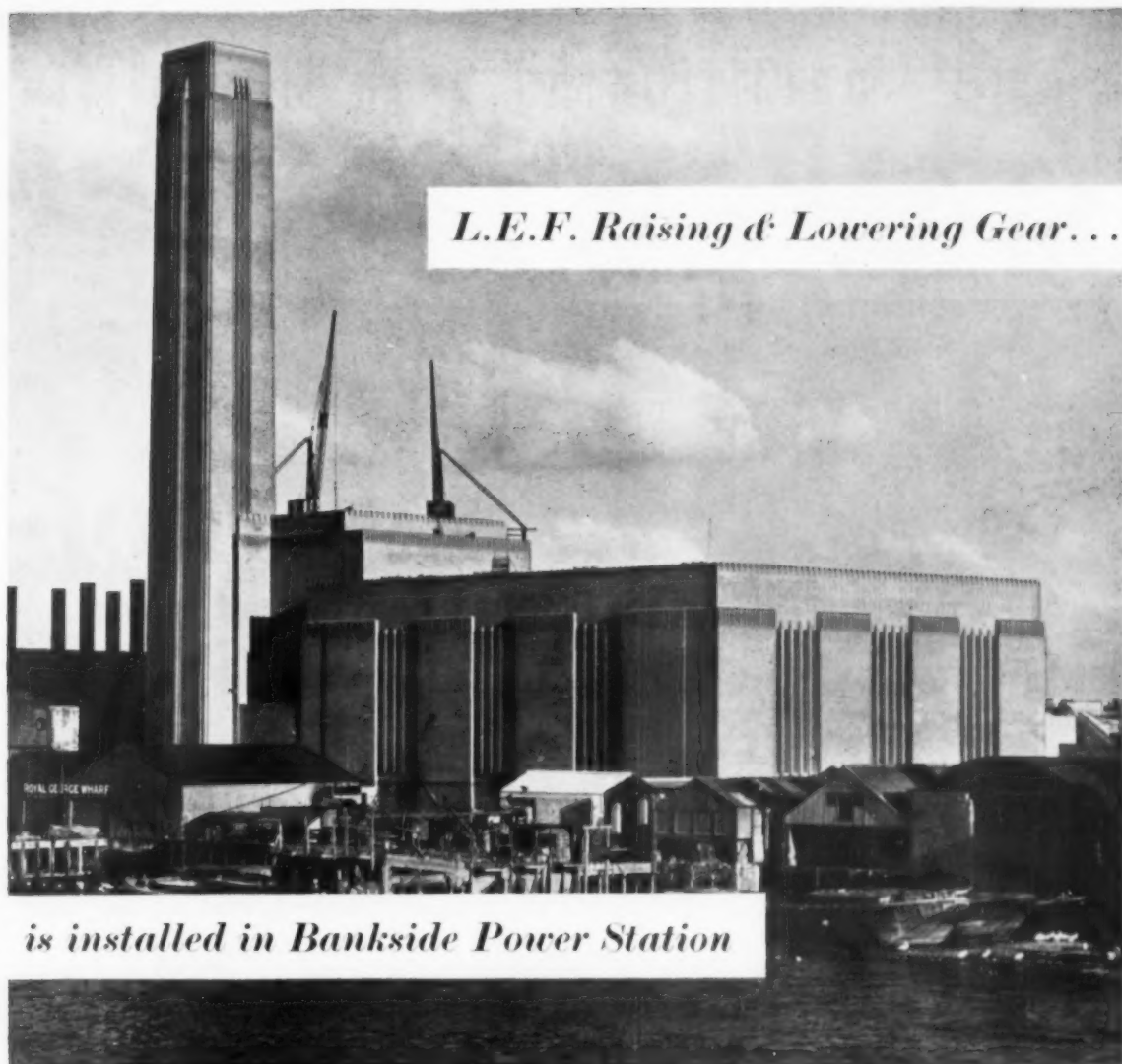
BRITISH PLIMBER LIMITED

19, Albert Embankment, London, S.E.11

Telephone: RELiance 4242

At the BUILDING EXHIBITION
STAND No. H. 178.

PLIMBERITE
BUILDING BOARD



WHEN planning lighting installations that are high up and difficult to reach, an important consideration is the method by which they are to be serviced.

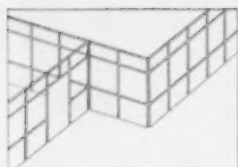
For convenience and from an economic point of view L.E.F. Raising and Lowering Gear is the obvious answer. Lights can be quickly brought down to ground level, serviced at ease, and raised again. The make and break of electrical contact is an automatic part of the raising and lowering action.

Bankside Power Station of the Central Electricity Authority is one of several of the most modern Power Stations in which L.E.F. Raising and Lowering Gear has been installed. Other L.E.F. installations will be found in all types of buildings and in public and private street lighting systems.

Send for full information or let us demonstrate L.E.F. Gear to you in our works.

LONDON ELECTRIC FIRM LTD., Brighton Road, South Croydon. Telephone : Uplands 4871



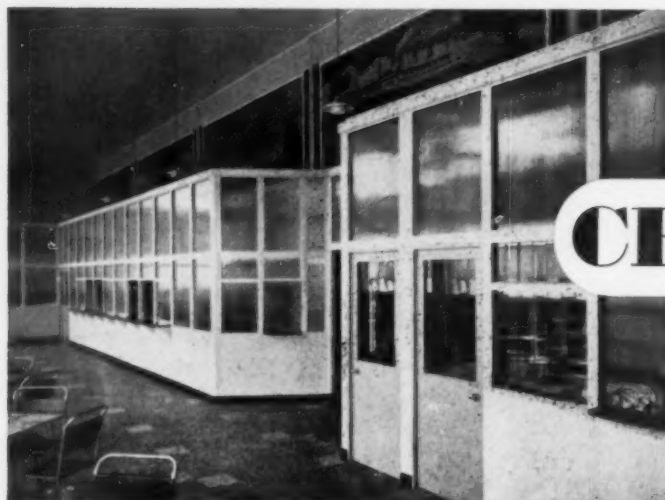


partitioning with flexibility

FOR OFFICE AND FACTORY

The efficient utilisation of space to meet present and future needs in offices and factories is a problem which confronts most executives from

time to time. Chatwood Steel Partitioning provides a solution acceptable to the employees and planners alike in that it is clean in appearance without the clinical touch, gives an abundance of light, and has dimensional flexibility yet looks permanent. The partitioning is finished in a hard durable enamel to a choice of colours.



CHATWOOD

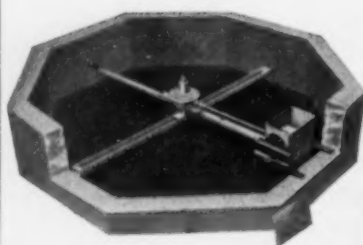
steel partitioning

Write for detailed leaflets to:—

THE CHATWOOD SAFE & ENGINEERING CO. LTD.,
Steel Partitioning Division,
3 Laurence Pountney Hill, LONDON, E.C.4.

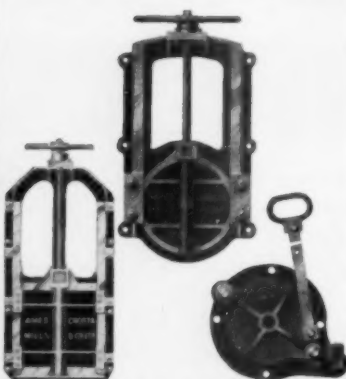
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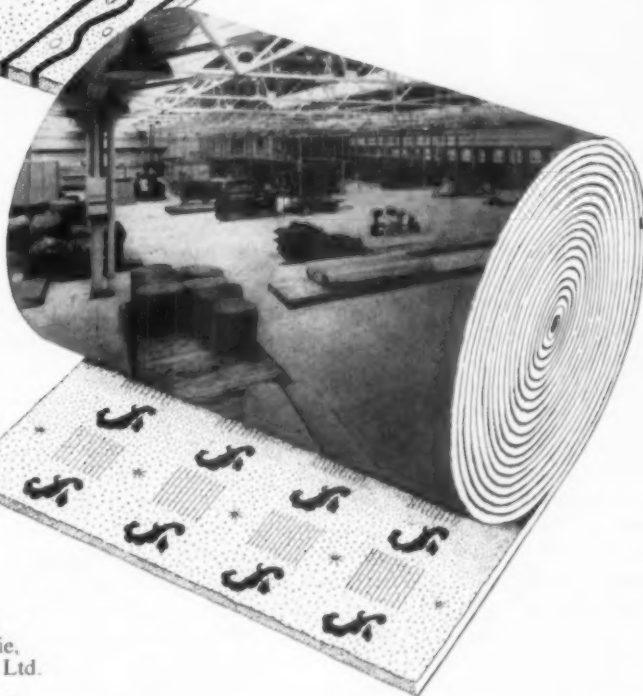
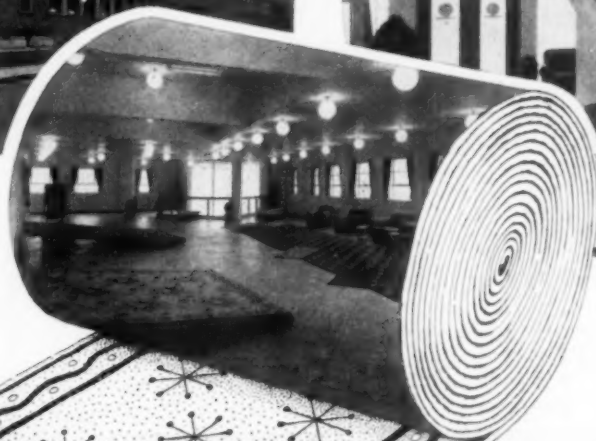
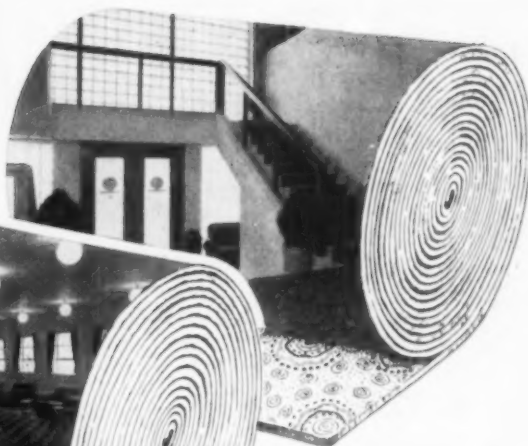
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Architects: Messrs. Cullen, Lochhead & Brown in collaboration with Messrs. Wylie, Shanks & Wylie, for the owners The Scottish Industrial Estates Ltd.

Henry Boot

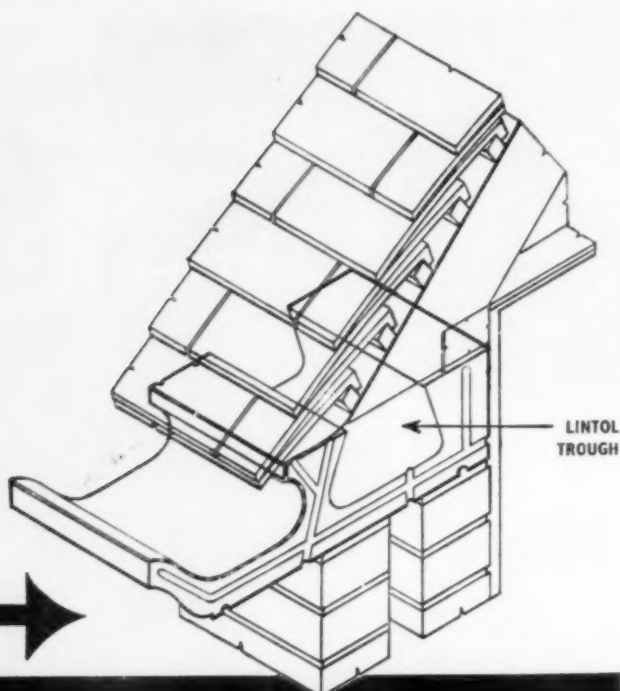
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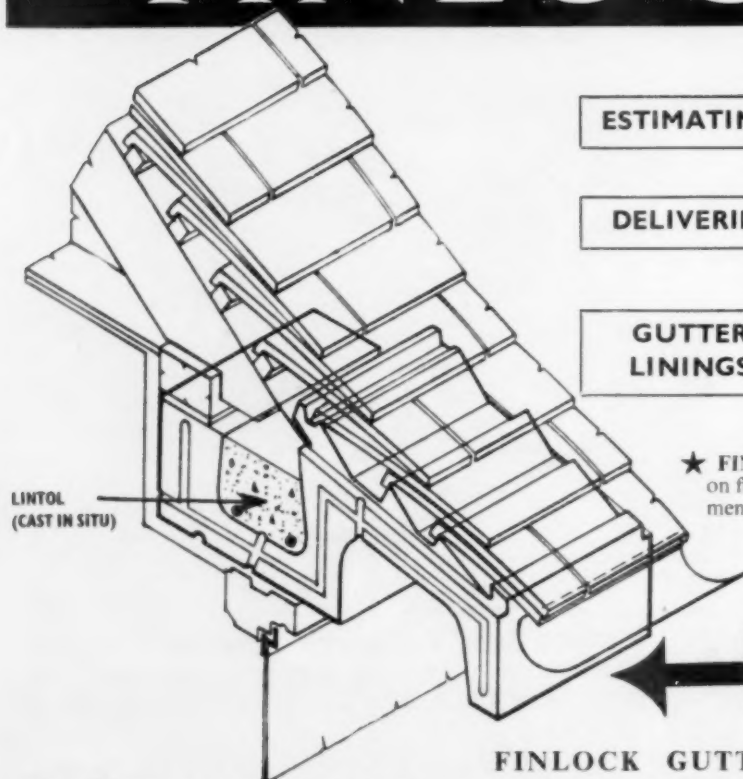
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THE ARCHITECT & BUILDING NEWS

27 October, 1955

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PROFESSIONAL TRADE UNIONS

THE whole study of ways and means of establishing an effective organisation for the negotiation of status, salary and conditions of service for architects has been bedevilled by the use of the short title "Trade Union." It is sad that a trade union; which incidentally has to be registered as such with the Registrar of Friendly Societies; has in recent years become for many the symbol of organised idleness and even of a modified gang warfare against the community as a whole for the benefit of one section. Perhaps the bogey can be laid by recalling the constitutional requirements which are laid down for any organisation whose objects are negotiation on behalf of employees. These are that a negotiating body for employees must be elected by the majority of those concerned, that the negotiating machinery allows the employers' side to recognise it, that any agreement it reaches will be binding on its members and that it is able to bring sanctions to bear if there is any breach of the agreement by either side. There are several kinds of organisation which could be formed to meet these requirements, a limited company with articles of association suitably drawn; the British Medical Association is an example of this; an unincorporated association, a friendly society or a board of trustees. There are, however, legal and constitutional complications arising from the Industrial Disputes Order, 1951, from which it seems that only an organisation registered as a trade union is fully competent to act.

It can be seen that any professional organisation whose primary object is the representation of its salaried members must be in constitution and fact a trade union if it is to operate properly. That is not to say that it need go the whole gamut of the popularly conceived activities of a trade union: strikes, go-slow campaigns, closed shop policies and so forth. There are in fact still some trades in which the unions have never called a strike and relations with the employers have always been good. They have, nevertheless, protected their members and done much to ameliorate their working conditions. There is no reason why a

professional organisation founded as a trade union should not have an equally clean sheet and yet be effective.

The two professions with the strongest organisations able to carry on activities of a "trade union" nature are the medical and legal professions but neither the British Medical Association nor the Law Society is registered as a trade union. The Law Society does not in fact act directly in matters of negotiation though its advice is listened to and it has influence with the government. The National Health Acts at a blow changed the medical profession from one predominantly self-employed to one consisting mainly of employees, but employees of rather a special kind. The negotiations which the British Medical Association carried on with Mr. Aneurin Bevan when Minister of Health could not be described as the normal activities of a trade union and could most certainly not be paralleled by the R.I.B.A. for architects nor by the Institution of Civil Engineers for engineers, for instance.

The profession of architecture, and perhaps accountancy also, is unusual: not only are there self employed architects and architects as employees of organisations, government or industrial; but also many architects employed by other architects. This puts the professional organisation in a quandary. If the R.I.B.A. were itself to carry out the functions of a Trade Union for the profession a truly Gilbertian situation could evolve: the R.I.B.A., as a whole, supporting three-quarters of its members, the employees, against the other quarter, the employers. The disruptive forces inherent in such a situation are only too obvious. A compromise solution, impracticable for a variety of reasons, might be suggested; namely that the R.I.B.A. should carry out the functions of a trade union only for architects not employed in private practice. If this were done it could be argued that the improvement in conditions of service and salaries obtained by its efforts in the fields of government and industry would be reflected in private practice simply through the operation of the law of

supply and demand. Principals in private practice would have to conform in order to get or retain staff. This is operating even now. The improvement; and there has been improvement; obtained by the exertions of the I.P.C.S. and N.A.L.G.O. has brought about a corresponding if not identical improvement for employees in private practice. We will return to this point later.

It really is not the function of a learned society, the guardian of professional education and professional ethics, to enter the lists as a combatant in the battle between employee and employer whoever each may be. This view is supported by the opinion expressed by learned Counsel when consulted:

"In my opinion it is no part of the objects authorised by the Charters and Bye-Laws of the Royal Institute, and quite inconsistent with the permissible application of funds, as well as being contrary to the spirit of the whole."

This does not mean that the R.I.B.A. could not support morally or even financially another organisation constituted on the necessary trade union basis with the sole object of negotiating salaries, status and conditions of service for architects if the necessary powers were obtained. So possible alternatives can be reviewed next.

There has been some support for the idea of a single organisation for architects to look after their interests in all fields of employment. The British Architectural Guild was registered not long ago. The desire for such an organisation springs partly from dissatisfaction with the results achieved for architects in Central and Local government service by the I.P.C.S. and N.A.L.G.O. It is said that architects are treated merely as part of the body of professional and technical officers and that their special needs and opinions are not given attention. In local government service, particularly, the complaint is that the clerical and general grades swamp N.A.L.G.O. by force of numbers. At the same time the clerical grades express resentment at what they consider the disproportionate improvement obtained in salary scales for the professional and technical grades. In the sphere of private practice it is argued that only an organisation composed exclusively of architects could function properly: this argument has force.

The arguments against setting up a new organisation composed exclusively of architects are very strong. A new organisation must obtain formal recognition and be given representation in the various joint councils of the national negotiating machinery. This is not given just for the asking. Much depends on strength of numbers both in obtaining recognition and also at a later stage in pressing negotiation to a successful conclusion. The architectural profession is small in numbers compared to the medical, legal or accountancy professions. Not only would it be difficult to persuade the employing side to recognise architects as an entity distinct from the other professions but it is also likely that the established organisations would see in the newcomer a weakening of their own influence. These very

difficulties have been faced recently in Norway where, after prolonged examination it was decided that the only hope of bringing adequate influence to bear was through one comprehensive union for all the professions. Even now it is said that their troubles are by no means over since there is considerable inter-professional rivalry within the union.

It is to be presumed that the R.I.B.A. Council were convinced by much the same arguments as set out above and came to the conclusion that the first alternative, a new organisation, had no hope of success. No doubt they also considered a variant, namely the exclusive and whole-hearted support of the only organisation already in existence which was not concerned only with one section of employment. The A.B.T. has had quite a long history and a good deal of experience in the field of negotiation. Since the Council did not specifically commend it to members one supposes they were conscious of the opposition it might meet from the I.P.C.S. and N.A.L.G.O. if it were to make any determined effort to enter the fields regarded as the preserves of these organisations. At any rate, in the letter sent to members in January, 1955, the R.I.B.A. Council advised "that their interests will be best served by joining an existing organisation appropriate to their particular field of employment." That is to say, the Council plumped for the second alternative of standing behind a number of organisations in an advisory role rather than adopting any one to the exclusion of all others. By the inference of what was not said, the Council had decided to leave private practice alone, for the time being at least, perhaps on the theory that with the likelihood of full employment for a long time to come conditions in private practice must conform to those achieved in official service simply through the law of supply and demand. This did not satisfy a number of members and at the Annual General Meeting in May the Council were told to think again. This they are now doing through a special committee under the chairmanship of Mr. Richard Sheppard.

Meanwhile, the situation has not changed and the various considerations set out in this article still apply. Much can probably be done for members in central and local government service by close and more active co-operation with the I.P.C.S. and N.A.L.G.O. It would not be going outside the terms of reference of the Royal Charters if the R.I.B.A. were to maintain an information service on establishments, status and responsibilities in relation to grading and salaries of architects in official service, but it is difficult to see what more can be done in these two fields. The same sort of action is feasible in regard to industrial and commercial employment; a suitable organisation could be supported.

There still remains the problem of private practice. The principal in private practice with a small office of perhaps one or two assistants: these form the great majority of private practices: sees himself as carrying the entire burden of risk, responsibility and worry. He



The R.I.B.A. Architecture Bronze Medal: The Northern Architectural Association, for the three year period ended 31.12.54, has been awarded to the Design and Research Building of Messrs. C. A. Parsons & Co., Heaton Works, Newcastle-upon-Tyne, designed by S. W. Milburn & Partners. Main Entrance Elevation shown above

is ready to pay a good wage to a good man and in very many cases to run some form of profit sharing scheme. But he is not prepared to accept regimentation and having to pay on some schedule of rates governed by paper qualifications. He is an individualist and many assistants who choose private practice are individualists also. There are also principals with both small and large practices who are willing to accept the principle of negotiating group agreements on salaries and conditions of service. It would not be difficult to find an organisation to represent the employees in private practice but it would be far from easy to produce an organisation fully representative of employers. An easy and unconsidered answer is that the R.I.B.A. could appoint a committee to represent employers. Such a committee would not be the representatives of the whole body of employers and would have no mandate from them. The problem of devising negotiating machinery for private practice is in fact the most difficult of all. Even if machinery is evolved there is still the question of how individuals on either side can be

compelled to adhere to any agreements made. It is also to be noted that in the answers to the questionnaire sent out by the R.I.B.A. the proportions in favour of and against a trade union were 87 per cent. to 13 per cent. in local government service but only 58 per cent. to 42 per cent. amongst assistant in private practice. Perhaps the best solution would be something far less formal, such as a joint consultative committee within the R.I.B.A. charged with the task of publishing periodical information and recommendations, having taken into consideration current conditions in government service.

Much of the present discontent is due really to the impact of the socialist state in which the gap between the economic position of manual workers and the professional classes has been closed to the latter's disadvantage. More of it is due to the uneven distribution of work and the tendency towards the development of large offices in both private and official practice referred to in the report of Sir Percy Thomas's Committee on the Future of Private Practice.

EVENTS AND COMMENTS

DUBLIN

I saw only three modern buildings during my very short visit to Dublin last week and two of them were by Michael Scott. One naturally enough was the bus station and the other a large motor engineering works and service station belonging to McCairns' Motors. The third building was Professor Fitzgerald's Dublin Airport building completed before the war but like the Van Nelle factory in Rotterdam still looking good, although it is now much too small for the traffic. I saw no sign of Neville Conder's prize winning telephone kiosk. I was told that it had never been put into production. I saw flats and houses in the course of construction in several places but they looked pretty gloomy. The Works Department, under Raymond McGrath, has I was told a big programme of school building but I saw none of its work except in the redecoration of Dublin Castle which has been very well done.

The bus terminus is well known but I imagine that the hideous iron fence which has now been put round the parking area is less well known. It is a very large building completely international in character. I thought that the concourse, which has a great sense of scale, could have done with some bright colour. It seemed somehow to have taken on the sootiness of a railway station.

I suppose it was because there was no sun that the city looked drab and faded. Only the brightly painted bar fascias and a number of new shop fronts showed up against the background of decayed Georgian decency.

With the many horse drawn carts and vans and the tall Victorian shop fronts I found myself back in my childhood. The pace seemed easier but the parking problem was as acute as anywhere I have seen. I am not a student of Ireland but I remember "the troubles" well so that I inspected the Post Office, the Customs House, the Four Courts and Trinity College with more than an architect's interest.

My very first impression of Dublin was the smell of peat smoke and this took me straight to a small island in Orkney where I spent part of the war. My second impression was of a very fair Georgian city fallen on hard times and my third that in every other street there was a building of some kind fit to throw John Betjeman into an ecstasy. Upon inquiry I found that Dublin had had almost precisely this effect on J.B.

I stayed in an hotel remarkable for the fact that someone has written a book about it and I don't mean Vicki Baum. It was large and warm and comfortable and packed with polite staff eager to make my life easier, and even if the waiter who attended upon me so assiduously at breakfast did smell very strongly of carbolic soap I reflected that this in all probability meant that he had scrubbed his hands with that com-

modity for morning inspection.

The really odd thing about Dublin is the feeling one has of being in what is after all a foreign country where almost everything in sight is precisely as it is at home. Almost the only things that are strange are the customs officers, the military uniforms, the official notices in Erse and the familiar pillar boxes still bearing the royal cypher but painted green. Many shops are familiar as is everything in all the shops. Against this oddly English background the conversation of almost everyone I met was completely Irish. England was very much "over the water", both geographically and metaphorically. I had the feeling that the people I spoke to still regarded their independence as newly won where we had long ago taken it all for granted. I suppose that this is not news to anyone who knows Ireland well but it struck me so strongly that I had to put it down.

I need hardly say that everyone I met was charming, and immensely hospitable. Nothing was too much trouble. I hope very much that I shall soon be able to find an excuse to go there again.

CITY OF LONDON ARCHITECT

Once more the question of an architect for the city has been referred back. The appointment was about to be advertised again at a salary of £3,400. If ever the appointment is made the successful candidate will need to be of toughish fibre for he will have to fight his battles for the corporation with the knowledge that he may have to fight them all over again with the corporation. I imagine that this prospect will deter some suitable people for applying if they ever get the chance.

I.A.A.S. OCTOBER LUNCHEON

It was hardly surprising to hear about modular co-ordination at this luncheon at Grosvenor House last week; H. A. R. Bushey, C.B., Director of the British Standard Institution, proposed the toast of our hosts, the London and Home Counties Branch of the Association, and Sir Alfred Bosson, Bart., proposed the Guests.

Mr. Bushey in a well-rounded speech acknowledged the help of the B.R.S. and Modular Co-ordination Society and told us that in 3 to 4 months time proposals would be put forward by the B.S.I. for building trials; the results of fact finding over past years in nine different countries. Sir Alfred during a recent visit to the U.S.A. learnt that they expect to have some form of compulsory modular co-ordination in 10-15 years time.

Speaking as an architect, Sir Alfred said he was a bit lonely in the House of Commons. What about someone joining him there? He is the only architect M.P. Compare this with the figures for other professions published in *The Recorder* after this summer's general election: Barristers and Solicitors 121; Writers and Journalists 49; Doctors 11; Engineers and Surveyors 9; Chartered Accountants 3.

Sir Thomas Bennett, K.B.E., who replied for the guests has the right qualities as a speaker. He is

generally worth listening to and makes his points clearly. On the several occasions I have heard him speak he has never appeared to use any notes.

ALUMINIUM IN BUILDING

I hear that the next exhibition at the B.C. will be organised by the Aluminium Development Association and will be an enlargement of the building section of the Aluminium Centenary Exhibition held earlier this year at the Royal Festival Hall. The exhibition will be open to the public from November 8-30. A number of special lunch hour film shows will be held during the exhibition.

CHANGE OF PLAN

I am not writing this in Paris as forecast last week but I leave at break of day and am glad to hear that the wind is moderating.

ABNER

Correspondence

Dear Sir,—In the issue of 2nd September, 1954, you were kind enough to publish a letter from me under the heading (supplied by you, Sir) "Unsatisfied Client" but I expect you have forgotten all about me in the interval of just over a year.

In case you are still interested I have the pleasure of informing you that I have bought my site and the architect I have engaged has just submitted the first plans for my comment and eventual approval.

In the interval between the year I (I should say we, but let it be understood that my wife is the better half in all this, though I write in the first person singular) spent some time blowing hot and cold looking for a property (I didn't rule out a sale or a spec. building) but was appalled; the more I saw the more distressed I became. We gave up part of our holiday for the search in late June, visited a very nice town in Surrey where we had been advised to look at the work of a young architect and lo and behold, we have found what we wanted (and enthusiastically so) have bought a site and Bob's your

uncle, we are now studying his plans. Now I am frightened, frightened for as Bacon said "A little knowledge is a dangerous thing" and on my little knowledge I have to say yes or no to the architect's propositions (fortunately I feel I can trust him implicitly) and more frightened because of a restricted purse to be opened in a period of inflation.

Yes, he is giving us what we wanted so much—a 1955 design or at least contemporary with a fair dash of the Festival of Britain. He is on the spot, so I must apologise to the interest shown in my case by several of your correspondents, as I can only engage one architect, but to you, Sir, I owe a special debt in ventilating my unjust grievance in thinking that architects were not interested in people like me—small fry who expect the earth for little return to the architect. I was wrong.

Now back to the plans, but more anon.

Yours faithfully,

JAMES KEARSLEY.

Dear Sir,—With reference to your leading article "Small Houses" in "The Architect and Building News" of September 29th, you say that the scale fee of 8.6 per cent for a £1,500 house is £210. But is 8.6 per cent of £1,500 not £129? Therefore the difference between the fee for the £1,500 house and the £5,000 house is £171 and not £90.

Surely this is quite a good proportion, especially as the architect for the £5,000 house is allowed to charge extra for detailing of finishes, interior fittings, etc. if they are more than the standard requirements.

Do you still think that there is a case for a modified scale of fees for small domestic work?

Yours faithfully,

EDITH JOURDAN.

Dear Sir,—In your leading article "Spot your Architect" in the A. & B.N. October 6th, you used the word "England" three times and "England" once, when I am quite certain it should have been "United Kingdom" and "British" respectively. Therefore, I say to you Sir, "Spot your Mistake", and my respect for your journal will be far greater than it is at present.

Yours faithfully,

"BRITISH READER"

(We accept the rebuke in contrite spirit. Ed. A. & B.N.)

NEWS

National Association of Architectural Students

The above named organisation was formed this year through the efforts of some 12 of the larger schools. It is open to all architectural students in Great Britain, whether working in schools or offices. Its aims are to provide a medium for a nation-wide contact among architectural students through such activities as discussions, lectures, exhibitions, study groups, exchanges of work, etc. These will be organised by regional committees. There will also be activities on a national level such as an annual congress and participation in international architectural student activities.

The annual membership subscription for students joining as individuals is 2s. 6d. and for student societies 6d. per member of that society.

Membership applications should be

addressed to: *Martin Bailey, Esq., Hon. Sec., N.A.A.S., The Bartlett School of Architecture, University College, Gower Street, W.C.1.* and cheques and postal orders made payable to The National Association of Architectural Students.

A.B.T. Meeting

On Thursday, 3rd November, at 7 p.m., at the Building Centre, Store Street, Tottenham Court Road, W.C.1, William Allen of the Building Research Station is giving a lecture to the London Branch of the Association of Building Technicians on "Modular Co-ordination in Europe".

The A.B.T. chose this subject on this occasion because they feel that Modular Co-ordination is now becoming a matter of practical importance to the building industry, and that its further advancement depends

largely upon the pooling of the practical experience of all types of building technicians.

They are therefore on this occasion throwing the meeting open to the public and invite all who are interested to attend.

Light teas will be served from 6.30 p.m.

COMING EVENTS

Royal Institute of British Architects.

November 1 at 6 p.m. President's Inaugural Address. Presentation of London Architecture Bronze Medal. At 66 Portland Place, W.1. Admission free.

Victoria and Albert Museum.

November 2 at 6.15 p.m. Talk by Winslow Ames, Society of Architectural Historians, U.S.A., on "Early Victorian Taste". At South Kensington, S.W.7.



Over 1,200 people attended the lecture given on October 14th by Professor Pier Luigi Nervi at the Friends' House. The platform group from L-R is as follows: Signora Nervi; D. H. New, President of the Reinforced Concrete Association; S. Vaughan, President of the Institution of Structural Engineers; Professor Nervi; and C. H. Aslin, P.R.I.B.A.

Notes from Minutes of The R.I.B.A. Council Meeting held on October 11

Appointments of R.I.B.A. Representatives.

Council of the British School at Rome: R. E. Enthoven, in succession to Anthony M. Chitty (the other representative is P. G. Freeman). *West Midlands Advisory Council for Technical, Commercial and Art Education:* Alan Young. *Regional Advisory Council for Higher Technological Education, London and Home Counties:* J. S. Walkden, in succession to Thomas E. Scott. *International Conference on Non-Destructive Testing of Material:* R.I.B.A. Representative to attend Informal Meeting convened by Institute of Physics to discuss resolutions passed at Conference: Professor W. N. Thomas. *Plumbing Trades National Apprenticeship Council:* W. A. Gutteridge—re-appointed. *Federation of Malaya Board of Architects:* V. S. van Langenberg, President of the Federation of Malaya Society of Architects, in place of A. O. Coltman, for three years beginning 1st January, 1956. *Croydon Technical College Advisory Committee on Building:* J. Kenneth Hicks. *Institute of Builders: Board of Building Education:* R. E. Enthoven, Vice-Chairman of the Board of Architectural Education. *Meeting to Consider Formation of Regional Productivity Committee for London:* Howard V. Lobb and E. D. Mills.

R.I.B.A. Architecture Bronze Medal: The Northern Architectural Association.

Formal approval was given to the award for the three year period ended 31st December, 1954, made by the jury

convened by the Northern Architectural Association in favour of the Design and Research building of Messrs. C. A. Parsons & Co., Heaton Works, Newcastle upon Tyne designed by S. W. Milburn & Partners (S. W. Milburn (F), D. Foster (A), R. W. Anderson (A) and T. D. Spence).

Record of Past Secretaries, R.I.B.A.

Approval was given to a proposal for a permanent record of past Secretaries, R.I.B.A. to be carved upon the wall in the Entrance Hall of the R.I.B.A. building. The following names will be recorded: C. L. Eastlake 1871-1878; W. H. White 1878-1896; W. J. Locke 1897-1907; Sir Ian MacAlister 1908-1943; prior to 1871, the Royal Institute had no permanent full time Secretary.

The South Eastern Society of Architects: Formation of Maidstone Chapter.

Approval was given to a proposal by the South Eastern Society of Architects to form a Maidstone Chapter. *Scale of Fees for State-aided Housing Schemes.*

The Council approved the report of the R.I.B.A. representatives on their negotiations with the Local Authorities' Associations. Agreement has been reached for an overall increase of 20 per cent. in the scale of architects' fees for state-aided housing schemes. Negotiations are to continue in regard to an adjustment of the number of different designs to be required in relation to the number of houses in a commission and also the possibility of some further adjustment in fees for commissions involving less than 100 houses.

R.I.B.A. Dinner 1956

It was agreed that it would not be practicable to hold a Reception at the R.I.B.A. during 1956 as the rebuilding

programme for No. 68 Portland Place would seriously inconvenience cloak-room and other facilities. It was therefore decided to hold a Dinner. The date and place are yet to be settled.

R.I.B.A. Journal Editorial Staff

Consideration is being given to the appointment of an Assistant Editor for the Journal. The intention is that the candidate appointed shall serve for a few years as Technical Assistant Editor with a view to succeeding the present Editor on his retirement. While it is desirable that a candidate should be a qualified architect this is not essential, but he should have a reasonable knowledge of building techniques both new and traditional and the ability to write good English. A qualified architect if appointed to the post would not be permitted to undertake private architectural practice.

Any member or Student interested should write to the Secretary, R.I.B.A. giving a brief outline of his qualifications and experience, asking for further particulars and stating his age.

R.I.B.A. Inaugural General Meeting

At the General Meeting on 1st November, at 6 p.m., the President, Mr. C. H. Aslin, C.B.E. will deliver his Inaugural address for the session 1955/56. The vote of thanks to him will be proposed by the Hon. David Bowes Lyon, Lord Lieutenant of the County of Hertfordshire, and seconded by Sir William Acland, Bart.

London Architecture Bronze Medal.

Mr. C. H. Aslin will present the London Architecture Bronze Medal for 1954, together with a Diploma to Dr. Leslie Martin, M.A., Architect to the London County Council in connection with the award which the Jury made in favour of the Ackroydon Estate, Wandsworth. Mr. W. G. Fiske, Chairman of the L.C.C. Housing Committee, will receive a replica of the Medal on behalf of the London County Council. Brief speeches will be made by Dr. Martin, Mr. Fiske and a representative of the Contractors—Mr. W. L. Marchant, Director of Tersons Limited.

Award in Town Planning.

The presentation of the Diplomas for the award in Town Planning will also be made to Mr. A. G. Sheppard Fidler, M.A., B.Arch., A.M.T.P.I., and to Mr. Frederick Gibberd, C.B.E., M.T.P.I. *Honorary Fellowship of the American Institute of Architects.*

It will be recalled that in the Spring of this year, Mr. C. H. Aslin was elected an Honorary Fellow of the American Institute of Architects. He was unable to attend the Convention at Minneapolis, at which the certificate was to have been presented and it has now been arranged for Mr. Ralph Walker, Past President of the American Institute of Architects, to present it to him at the Inaugural General Meeting.

The facade and only entrance of the Basilica. The walled up door can be seen in the centre, and, on the right, steps that once led up to Calvary, now also blocked. The dome is the small dome over the crossing

The Basilica of the Holy Sepulchre

By

DAVID STOKES, F.R.I.B.A.

I GOT back to my office one afternoon last July to be told that a new client, a Franciscan Friar, wanted me to go to Jerusalem. I had never been there, and, as I am always envious of my friends who "globe trot" at other people's expense, I lost no time in getting on to the Friar, feeling certain the report was in some way inaccurate. My cautious "What can I do for you, Father?" produced a very Irish "Go to Jericho!" and to Jericho I went. But that was after a week of hard work in Jerusalem, when, with a day to spare, some of us were taken on a rapid pilgrimage, first to the Garden of Gethsemane, where the olive trees are so old that they must have been there in the time of Our Lord, and where, on the site of an old Basilica, a church has been built since the war, subscribed to by every Christian nation. The floor is a copy of the old floor, portions of which remain, but the rest of the Church suffers from mosaics of doubtful quality.

At Bethlehem we saw the real thing, the Basilica, built by Justinian in the sixth century on the site of the fourth century Church and Monastery where St. Jerome translated the Bible. It seems the Church was respected by the Persians, as in A.D. 614 when they overran Palestine, the mosaics shewed the Magi in Persian dress. In the course of time it has, however, lost most of its mosaic and marble decoration, but I liked its present simplicity and its plain wooden roof, and found it a fitting shrine for this holy place, which bears the inscription "HIC DE VIRGINE MARIA JESUS CHRISTUS NATUS EST."

To go into the Basilica you have to bend right down in order to get through the low door. The main doors were walled up for security reasons, and also (and this I find rather pathetic), to prevent animals from getting

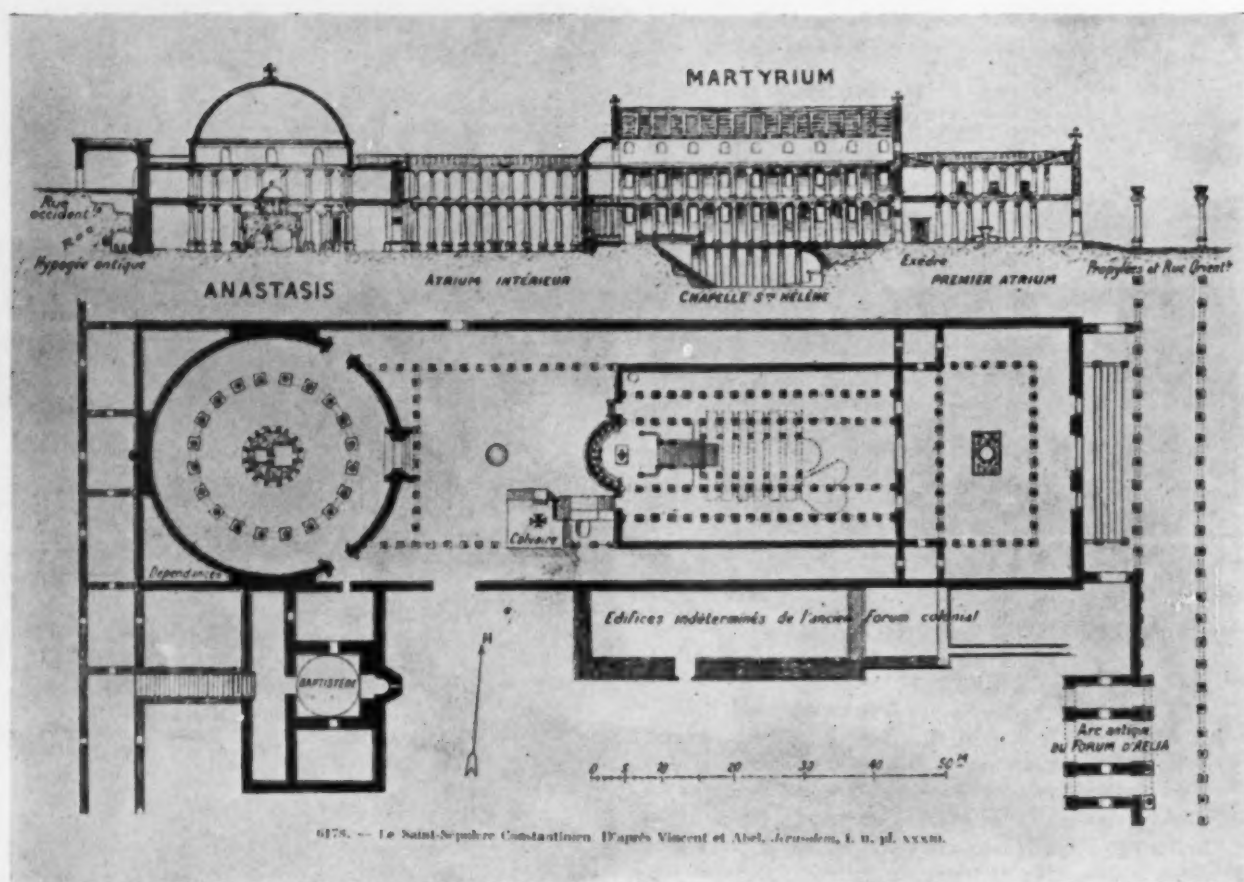


in. The Beasts, it would seem, wish to claim their undoubted rights at the manger together with the Latins, Greeks and Abyssinians!

This question of rights is a very serious one and presents many difficulties in the Holy Places, not least in the Basilica of the Holy Sepulchre in Jerusalem, the central Church of all Christendom. Six religions share this Church, Latins (that is Catholics), Greeks, Armenians, Copts, Syrians and Abyssinians.

The object of my visit to Jerusalem was to advise in collaboration with architects from other countries on vital repairs to the Church. These had been allowed to go by default, owing to the difficulty of reaching agreement where so many people are involved. The Jordan Government and the religious communities are all concerned.

The rights of the various communities are based on what is referred to as the status quo of 1757—the Armenian rights however not being obtained until 1829. That the Latins have never regarded this as satisfactory is illustrated by the demands of the Catholic powers to the Ottoman Government in 1850, which were stoutly opposed by the Russians, all this contributing directly to the outbreak of the Crimean War.



The Anastasis, the place of the Resurrection, and the fourth century Basilica of Constantine. Destroyed by the Persians in 614

The Basilica of the Holy Sepulchre

Whatever the respective rights and wrongs it is clear that the Christian rights have depended for hundreds of years on the protection of the European powers, and I find it interesting that this persists until the present moment, and that four of our Committee of seven, who advised the Latin community, were sent by their own countries for this reason.

Today there are very hopeful signs, I think, that everyone wants to collaborate and to do the right thing by the Basilica. We should surely give much credit for this to the communities who are living so closely together in this House of God.

When we had finished our immediate task and completed the report, the Franciscans, who were our clients and who represent the Latins in the Holy Places, gave a cocktail party at the best hotel and invited the heads of all the religious communities in Jerusalem, including the Moslem and the Anglican, to meet us. The Governor, the Papal Delegate and the Consuls were there and also the Architects of the other

communities with whom we later conferred in order to reach our final agreement.

It is the Jordan Government who has been pressing the communities to agree on the necessary repairs. The British, as mandatory power, having shored up many parts of the edifice in the 30's, were interrupted in their work by the outbreak of the world war before any of these repairs had been carried out, and in 1947 they called in Fox Freeman & Partners (the engineers) to prepare a report. The war between Jordan and Israel caused this to be shelved, and last year (1954) the Jordan Government, on whose territory the demarcation of the armistice line had placed the old city of Jerusalem, called the communities together and asked the engineers to bring their findings up to date.

Last July (1955) a new report was prepared and this included, at the Engineer's request, one by Basil Spence, who was asked to advise on the treatment of visible surfaces. The Government asked for observations on this document from the Latin, Greek and

Armenian communities, who have the most important rights, and they, accordingly, proceeded to consult their professional advisers.

Owing to the great importance of this matter the Latins decided to include representatives from Holland, the United States and the United Kingdom, in addition seeking advice, as is their custom, from France, Italy, Spain and Belgium, and so our Committee of seven architects was set up.

We lived and worked together for a week and grew to know, respect and like each other, so that we had no difficulty in arriving at unanimous conclusions.

We had meetings together with the Architects of the Greek and Armenian communities, so that when our report was read over to them they were in substantial agreement with it, and we are encouraged to hope that they will offer similar advice to their clients. A joint document was signed by all concerning certain urgent restorations, and, what is especially important as will be seen, agreeing to the need for exploratory work to be started forthwith.

We had elected Mr. Thunnissen, who is President of the Dutch Architectural Society, as our Chairman and much of the credit for the remarkable progress we made is due to him. I was made "Minister of Transport" owing to my knowledge of English, a gift shared to a limited extent by the Jerusalem taxi drivers. My difficulty (which nearly led to my removal from office)

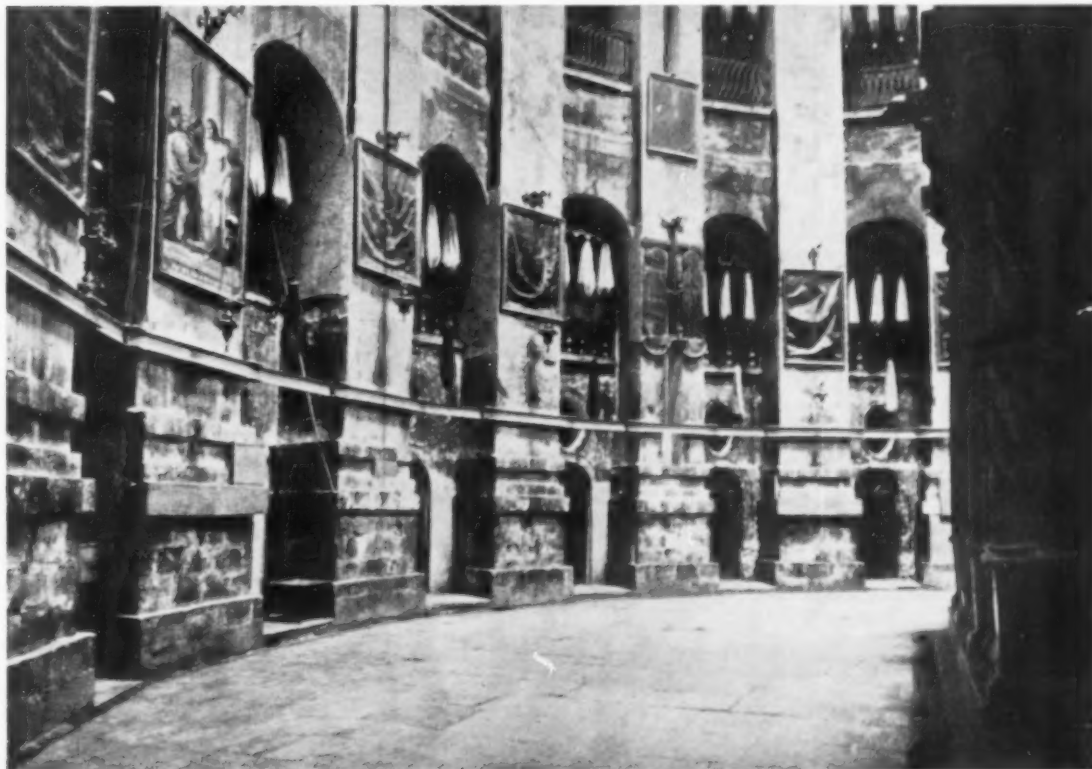
was their habit of always pretending to understand regardless of whether they did or not. There were some raised eyebrows among my fellow travellers when, at Beirut Airport, after the conference, I ran into our Italian Architect, Signor Forlati and we fell, with true Latin enthusiasm, into each other's arms, hailing each other as "Minister". Signor Forlati had elected himself as our "Minister of Tourism". This gave him the right to pay for our admission to the Mosque of Omar for which he was a well qualified guide. He is the Architect for the restoration works there.

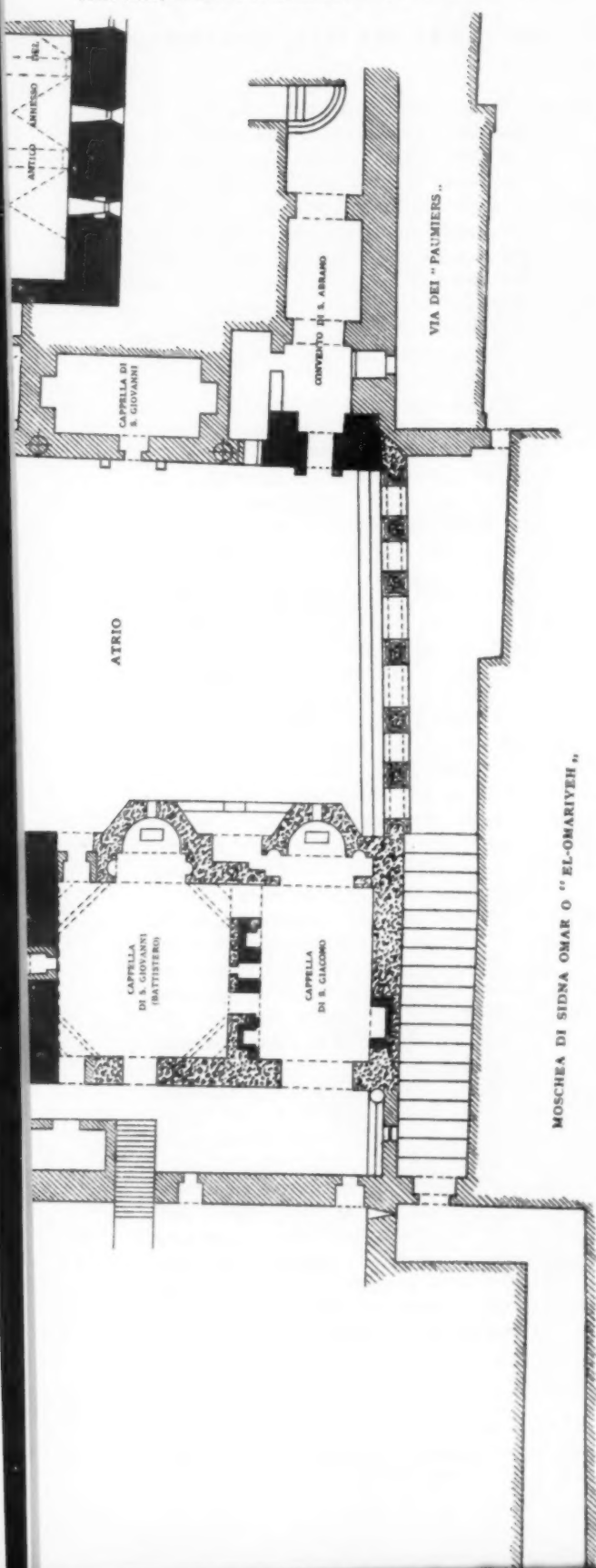
The Mosque, the "Dome of the Rock" as it is also called, is a Byzantine building of great beauty set in a vast paved open space which occupies about one-sixth of the area of the otherwise very closely built-up old city of Jerusalem. After approaching through the narrow passageways of the little walled town the contrast effected by this white space, glaring and shimmering in the sun, is quite startling.

The Rock is venerated as the site of the Jewish Temple, and in the grotto underneath one is shown the place where Abraham, David, Solomon, Elias and Mohammed prayed. Mohammed, it seems, struck his head on the ceiling and the impression made by his turban is still to be seen there.

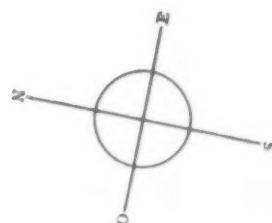
The best bit of our report, the preamble, was written by M. Lacoste, head of the Beaux Arts in Brussels. We cut it out from his preliminary report,

The Anastasis as it is today, showing the heavy piers passing in front of the gallery at the top of the picture. The rooms which block the Ambulatory can be seen under the arches between the piers. The Tomb is in the right foreground





Plan of the Basilica as it is now



The Basilica of the Holy Sepulchre

(all of us had to do preliminary reports), as in a way it had no bearing on our subject but it succeeded in putting the reader into the right aesthetic mood for the hard facts that were to follow. I suggested that a poet be employed for the English translation as literal translation was impossible. Here we must be content with the skeleton.

Constantine (A.D. 306 First Christian Emperor) caused this Church to be built in order that from the main street of Jerusalem the people should pass through a colonnade into an open courtyard in front of the great Basilica. Pilgrims proceeded through the whole length of the Basilica to yet another open court, to one side of which was the site of Calvary. This courtyard linked

The Basilica of the Holy Sepulchre

the Basilica to the anastasis, a circular building with the Holy Sepulchre at the centre surrounded by a ring of columns, outside which was an ambulatory enclosed by a solid wall parts of which stand today.

The Rock tomb of Christ had, like other Jewish tombs of the period, a small outer chamber for mourners with an inner compartment for the dead. The tomb was in the side of a hill, part of which was excavated to provide a level floor. The ground at the back was, as a result, considerably higher than that in front of the building. Only the Rock around the Tomb was left standing in the centre.

In 614 "Invading Hordes" destroyed nearly all the buildings including the tomb. These were replaced soon after by a smaller church, destroyed in 1009. The anastasis was again rebuilt by 1048 to the original plan but with two Storeys of Orders, surmounted by a drum and conical wooden roof. It remained in this condition, with replacements to the roof, until the fire of 1808, which severely damaged it.

In the twelfth century the crusaders, faced with a smaller site and unable to replace Constantine's Basilica, built a church on to the Anastasis as an extension of it and connected the two by a wide arch. The transepts were placed nearest the anastasis, then an apse for the High Altar, surrounded by an ambulatory and chapels, the whole planned and constructed very much on French mediaeval lines. The site of Calvary was given no prominence at all, being a small chapel at an upper level off the transepts. It was, however, provided with a separate entrance and with its own staircase. This is now closed and the only approach today is by two very narrow steep stairs.

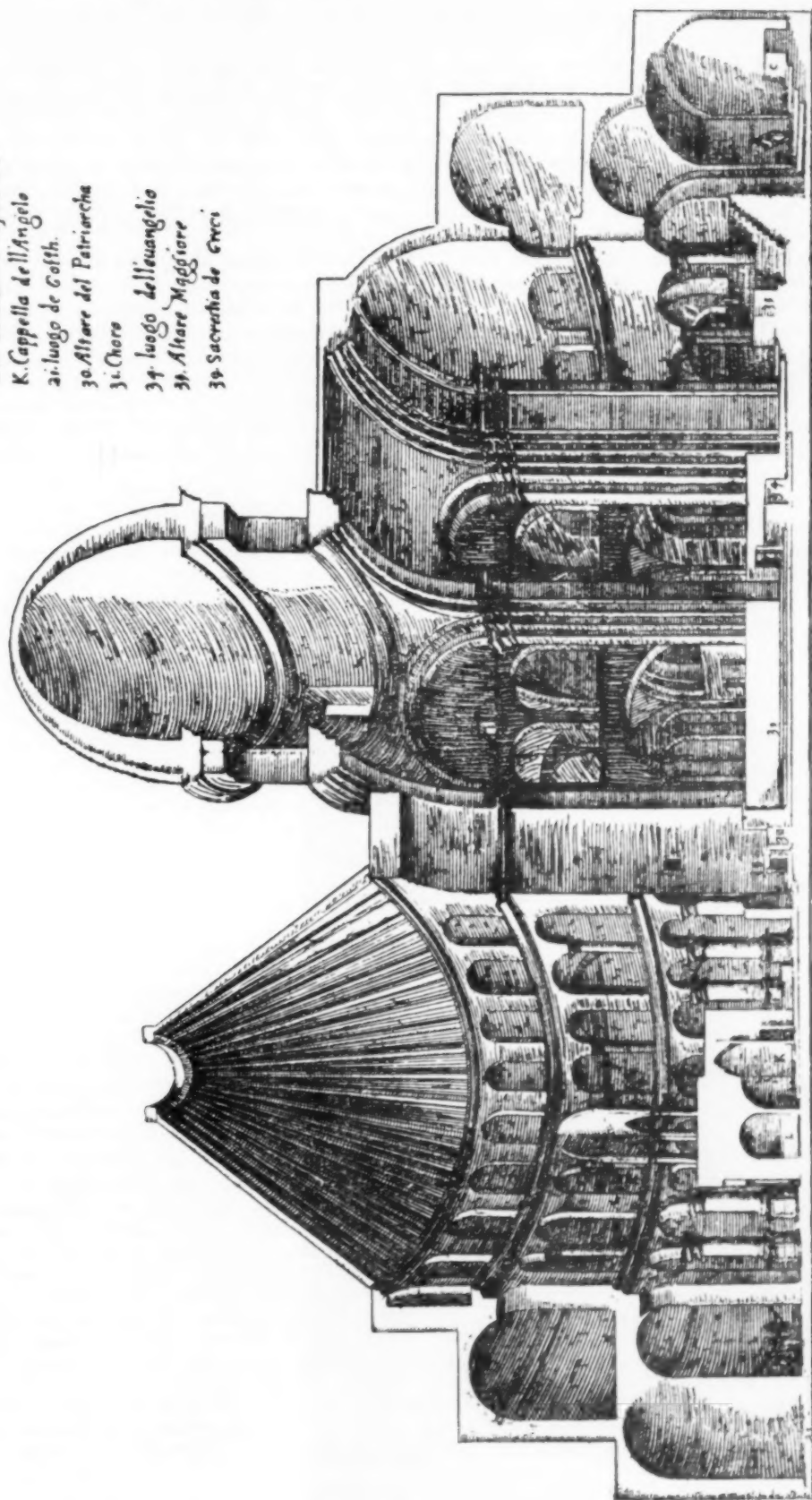
In 1810 extensive repairs were carried out after the fire, resulting in much larger single storey piers in the anastasis. The piers were finished with plaster and have stone bases. These are the conditions prevailing today, but the whole is in a bad state of repair. The present dome dates from 1865 and is a very interesting wrought iron construction finished on the inside with plaster and covered with lead. A fire of 1950 destroyed all the covering and it may now be beyond repair. There is a second, smaller dome over the crossing which is modern.

Some people thought that when the piers were replaced, as was proposed in 1954, by reinforced concrete columns, that some of the old 1048 stone columns would be uncovered, and it was suggested that peep-holes could be left in the concrete to show parts of the old columns, which could be left inside the new structure. It was agreed to investigate two piers and



Diagram plans illustrating proposed restoration and improvements

L. il Santissimo Sepolchro
 K. Cappella dell'Angelo
 21. luogo de Cofth.
 30. Altare del Patriarcha
 31. Choro
 34. luogo dell'euangelio
 35. Altare Maggiore
 39. Sacrestia de Greci



BASILICA OF THE HOLY SEPULCHRE

- KEY:
 C. Where they played for the raiment
 L. The most Holy Sepulchre
 K. Chapel of the Angel.
 21. Place of the Copts.
 30. Altar of the Patriarch
 31. Choir.
 35. High Altar.
 39. Greek Sacristy.

Perspective longitudinal section published in A.D. 1609
 Note the double storey under the drum supporting the
 cone of the Anastasis. Some of these columns and
 piers are inside the piers shown in the Anastasis as
 it is to-day

The Basilica of the Holy Sepulchre

on scraping a small area of plaster from one they found a square stone pier inside as depicted on the early prints. When they proceeded to scrape one that should have been round they found, alas! another square one. They persevered and on cutting through the stone they came to a round column inside. Now we have agreed that one whole column be stripped and small holes be made in the others. (Two are clearly missing as the square piers have been varied in these cases and have been built up only at the four corners, leaving a void in the middle.)

It is now thought that many of the cracks in the piers are caused by the encasing stones being pushed out by the rusting of the iron clamps which hold them.

We all hope that the repairers of 1810 have left us enough of the old columns with capitals and bases and cornices to justify a complete restoration of the 11/12th century church. Any new work would be clearly marked but we propose to retain the old columns with stainless steel supports threaded through them. To a limited extent similar conditions apply to the rest of the Church.

It is all very exciting and it is easy to see why so many architects agree to the principle of resuscitating

the church the Crusaders used. We also agree on the desirability, if the communities can be persuaded to waive their rights, of clearing away all the screens and partitions which divide the various portions, and which now clutter up the church, blocking the transepts from the crossing and preventing access to the ambulatory around the anastasis. Basil Spence's report also covers these points.

There are a number of other problems. Perhaps the importance of the main one is underlined by my including that of access to Calvary as a subsidiary problem. Circulation is a big difficulty, especially when several different processions have to be marshalled through the only door, for there is only one door. The one access therefore to the Franciscan convent is through this door and through the Basilica. There are bedrooms for some of the other communities inside the church, some inside the pillars. The door is shut every night and every midday and those that find themselves inside must stay there until opening time. One of the communities has to pay to have the door opened every morning, as since 1244 two Moslem families have owned the privilege, one of keeping the key, the other of using it.



The Dome of the Rock. Picture by Robert Byron from his book, "The Road to Oxiana."

POINTS FROM PAPERS.

Concrete and Structural Form

by PIER LUIGI NERVI

A lecture to a meeting organised by the Institution of Structural Engineers and the Joint Committee on Structural Concrete held at the Friends Meeting House on October 14 1955

I AM very honoured and deeply grateful for this opportunity of meeting my English colleagues and of talking to them about some of the work I have done in the course of an already long career as designer and constructor.

I should make it clear that I both designed these works and was responsible for their construction as partner and technical director in the firm who built them. And I must say, also, that this opportunity of uniting these two aspects of the construction process—design and execution—which have tended more and more to separate into two distinct functions, has greatly contributed to any success I may have achieved.

The fact that design and actual construction could be united in this way was due to the method of placing contracts, known as the "competition-tender," which is already fairly widespread and is tending to be increasingly used in Italy. The method consists in inviting a number of firms, known to be well qualified from the technical point of view, to submit a tender including the actual design as well as a price quotation. The design is based on an outline provided by the commissioning authority and these outlines always allow ample freedom for the best architectural and structural solutions to the problem. Design and tender are sent in as in all normal competitions of this kind. The commissioning authority makes separate examinations of the technical and the economic data and selects the design which seems the most satisfactory from all points of view.

A design that is good from the aesthetic and technical points of view is nearly always sufficiently economical; in any case, the commissioning authority has full data on which to base a choice and may even accept a tender which is not the lowest, if the qualities of the design are such as to outweigh a small difference in cost.

In some cases, the invitation to tender asks for a lump sum contract, so that, except for unforeseen circumstances, the commissioning authority knows exactly how much the finished work will cost.

The advantages of such a system are obvious. Competition stimulates the designer-contractor to develop the most suitable design from the economic as well as from the technical point of view, and to study new and more efficient building methods for its execution. The extensive knowledge of materials which he possesses as a practical contractor, his realization of the limitations and difficulties of the actual execution and his study of means of overcoming them will, on the one hand ensure a realistic approach to the design, but they may also suggest daring, yet rational solutions, that might have seemed impossible to the purely professional designer. Moreover, the designer-contractor can carry out preliminary tests and

experiments—even quite costly ones—within his own organization, where this would be practically impossible for the purely professional man.

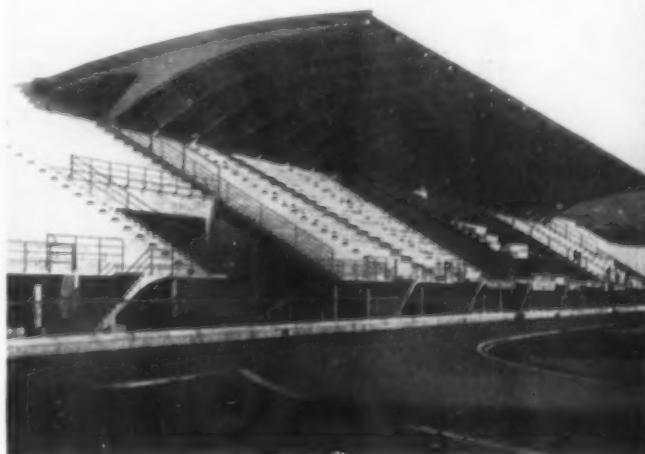
It seems to me necessary to make these points clear, in order to emphasize what I consider the most important characteristics of my works: that they are the result of a constant endeavour to find the most efficient design from the technical and the economic point of view. All my designs, even those that might seem to have been developed on more formalistic lines, are, therefore, the direct result of structural or constructional considerations.

Moreover, I am deeply convinced—and this conviction is strengthened by a critical appraisal of the most significant architectural works of the past as well as of the present—that the outward appearance of a good building cannot, and must not, be anything but the visible expression of an efficient structural or constructional reality.

In other words, form must be the necessary result, and not the initial basis, of structure.

The first important work which my firm was commissioned to carry out was the Stadium for the City of Florence, built in 1927.

The outline given by the City's Technical Department was very sketchy; it specified the number of spectators that the stadium should hold (35,000), the dimensions of the covered grandstand, the length of the running track, the

Stadium for the City of Florence.

Concrete and Structural Form

provision of a Marathon tower and a few more details of a general nature.

Essential items, from the architectural and economic point of view, were the design of the wide-span canopy to the grandstand, the open stands, the external staircases and the Marathon tower.

The principle of the design for the covered stand is obvious. It provides for the equilibrium of the whole structure without ground anchorage; these anchorages are always uneconomical because they involve the use of large quantities of material to counteract the forces transmitted from the anchorage to the ground, through the structure.

The variation in section of the main ribs is determined by the law governing the variation of moments.

Purely aesthetic considerations inspired the slight curve of the canopy and of the haunching of the main ribs.

An interesting problem was set by the outside staircases, which involved considerable difficulties in construction, and which made me realize, for the first time, the extent to which the full development of reinforced concrete is linked up with the problem of timber formwork and its inability to adapt itself to curving or spiralling surfaces.

I found the exact calculation of staircases impossible and I therefore limited myself to a calculation of this complex, statically indeterminate system in terms of simple, statically determinate elements, and calculated them for the greatest stability even at the cost of high unit stresses, as I was confident that the wonderful plastic qualities of concrete would of themselves bring about full and efficient monolithicity between the structural elements.

Events have fully justified my confidence, and the strictest acceptance tests and—more important—time and use, have demonstrated the perfect stability of the structure.

* * *

A particularly interesting opportunity was given to my firm in connexion with the competition organized by the Italian Air Force authorities in 1935 for the construction of large hangars spanning 330ft by 135ft internally, with door openings of 165ft span.

I designed the structure as a geodetic framework acting together as a whole, as I believed this would give the most economical solution and the one requiring the least steel.

With this type of design the theoretical calculations were extremely complicated and on a much larger scale than those for the spiral staircase I have previously mentioned. I therefore decided to make a preliminary calculation and then to make a detailed study of the stresses by means of experiments on a model.

The model experiments were carried out at the Milan Polytechnic, under the direction of Prof. Ing. Danusso and Prof. Ing. Oberti; I believe this is one of the first instances in which the results of model tests have been applied to a really large-scale structure.

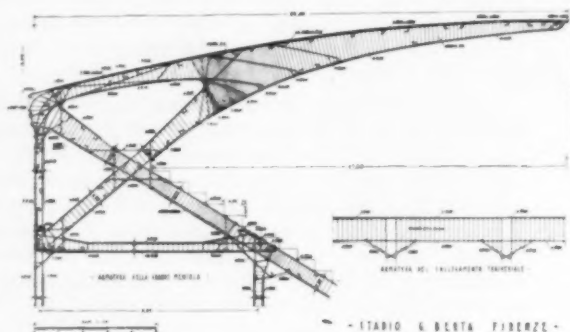
The results of the model tests enabled me to go fully into the static behaviour of the structure and to estimate the stresses in the whole framework, and it was found that the estimates provided by the preliminary calculations used

in the construction of the model required hardly any alteration.

The actual construction was not easy, and provided yet another illustration of the economic disadvantages of timber formwork wherever reinforced concrete work goes beyond the simplest shapes.

In 1940 the Italian Air Force authorities invited new tenders for the construction of hangar No. 6, of similar dimensions. At that time, the need for economy in materials and timber had become even more acute and this is why, on the basis of the experience acquired, I decided to simplify and lighten the structure by designing the ribs as a lattice, which would enable me to make use of prefabrication. I also altered the system of supports in order to simplify the static system and make it more symmetrical.

In this case again, model tests were carried out. The greater structural simplicity and the extensive study made of the previous hangar design enabled me to make a still



Structure of the covered stand: stadium for the City of Florence. Below, one of the staircases



better approximate calculation, the results of which agreed exactly with those of the model tests.

The precasting of the units and their erection proved quite simple.

The method of assembly had been tested by my own firm, in its workshops, and by the Laboratory of the Milan Polytechnic. The joints were made by welding the steel and placing high strength concrete *in situ* in the space left at the junction of four units. The results were excellent, as may be observed on visiting the remains of the six hangars. The Germans destroyed them when they retreated by demolishing the supporting columns, but even after the fall of the roof, the great majority of the joints are still intact.

* * *

Meanwhile, conditions at the time had led me to work on a new type of construction that I called "ferro-cement". It is based on the principle of a very thin, highly reinforced slab obtained by forcing a very good quality cement mortar, made with cement and sand, through several layers of steel mesh and small diameter bars, joined together to form a section only a little thinner than the final unit.

The mortar was placed either by hand or by vibration and the results were extremely promising, not only because of the exceptional flexibility, strength and freedom from cracking of the slabs so obtained, but even more because the mortar being held by the mesh, one could greatly simplify the formwork or even do away with it altogether.

This new method was devised mainly for the quick and simple construction of small ships of a tonnage not exceeding 500 tons. In 1943, work was started on three motor-transport boats for the Italian navy and one sailing ship, with auxiliary motor, for private industry.

The events of the war prevented the completion of this work, but in 1945 my firm built the yacht "Irene" which is still in use and in perfect condition, and in 1948 I adapted the method to build a 40ft ketch, the "Nennele" for my personal use. The hull of the "Irene" is $1\frac{1}{2}$ in thick, that of the ketch "Nennele" $\frac{1}{2}$ in thick.

These designs, and others, both for ships and buildings, which it would be too long to describe, gave me the necessary experience to attempt, in 1948, a much greater work—the roof of the Exhibition Hall at Turin.

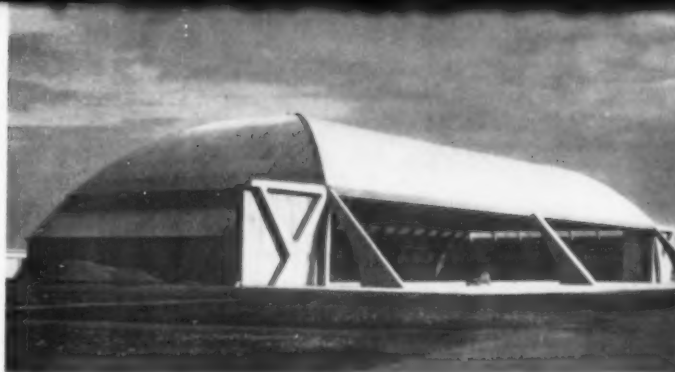
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In this case again, my firm was invited, along with several others to submit a design and tender for the construction of a large exhibition hall, to replace the Palace of Fashion destroyed during the war.

The problem was particularly interesting, not only because of the dimensions of the hall (nearly 330ft span) but also because of the very short time allowed for the execution of the work, which was to start in September and had to be finished by the end of April. This very short time was a real problem in view of the difficult climate in Turin.

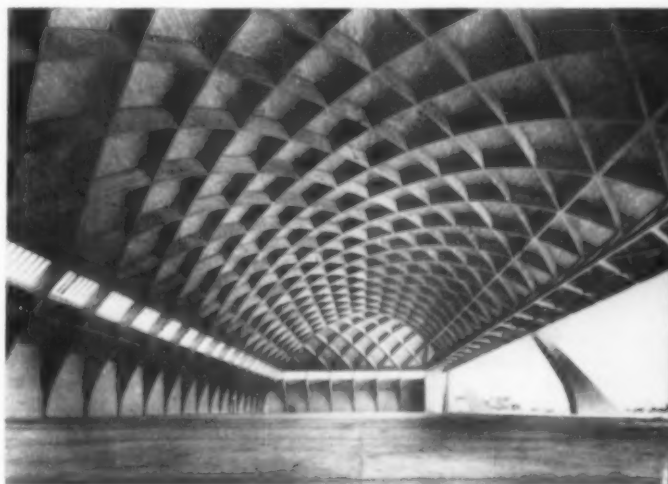
The solution I immediately thought of was a structure in corrugated "ferro-cement", which would attain the necessary stability by virtue of the corrugations and would enable us to use precasting, as in the case of the hangars, and to manufacture the roof units while the floors and supporting structure were being built.

On this basis I designed a roof structure with corrugations of about 8ft span, divided into units about 13ft long.



Aircraft hangars at Orvieto, Italy

Below, the interior showing cellular roof construction



The yacht "Irene". Its hull is built of $1\frac{1}{2}$ in of ferro-cement



Concrete and Structural Form

The units were to be made of "ferro-cement" in order to be as light as possible (thickness 1½ in) and would be rendered monolithic by reinforced concrete ribs cast *in situ*, and located at the peaks and troughs of the corrugations. In this way the "ferro-cement" units would act as junction units between the *in situ* ribs which in turn would take over the main structural work.

The units are closed at each end by stiffening diaphragms and adjacent units are joined together by a 1½ in thickness of mortar placed *in situ*.

The casting of the units proceeded without any difficulty and without the need for double formwork, as would have been the case with ordinary reinforced concrete. Because of the richness of the mortar (800kg of best quality cement to 1 cu m of sand), the units could be de-moulded in either two or three days, according to the outside temperature.

Lifting and placing the units proceeded regularly and enabled about 3,230 sq ft of roof to be completed each day.

The construction took place in three stages, to get the fullest possible use from the movable formwork.

The corrugated roof was connected to the main supporting columns (which are at 24ft 7½ in centres) by fan-shaped "ferro-cement" units springing from inclined reinforced concrete elements.

The method of construction with precast corrugated "ferro-cement" units is readily applicable to the construction of large span domes and enabled me to solve the problem of the 420ft diameter roof for the Sports Palace at Vienna.

I made this design in collaboration with my architect son, Antonio, and entered it for the competition organized by the city of Vienna, but it was not successful.

It still has a certain interest, however, principally because it shows how the method can solve at one time all the various problems involved in the design of a roof with such a large diameter.

Quite apart from the essentially subjective judgment of its architectural aspect, which may or may not be found pleasing, a purely objective judgment will show how the

problems of structural efficiency, economy, thermal insulation, provision for air-conditioning ducts, natural lighting and, more especially, acoustics and sound absorption (very important factors in large buildings) have all been simultaneously solved.

I have, moreover, often observed that a design that is sound structurally is generally satisfactory in every other way.

* * *

For the design of the 130ft diameter half-dome at the end of the main Exhibition Hall in Turin I used a method, based on precast units, which I had studied and actually used, though on small-scale structures, immediately after the war.

This method had also been inspired by the need for economizing in timber, which was extremely scarce in Italy at that time.

The method is suitable for the construction of vaults or domes and consists in filling the space to be covered with precast units measuring approximately 6ft 6in by 13ft. The units are cast in concrete moulds which in turn are constructed on a model reproducing a section of the vault or dome to be built.

The edges of each unit are so shaped that when placed side by side they form channels about 4in wide between the units, which are filled with *in situ* reinforced concrete and form a network of supporting ribs that completes the structural system. The units are made of "ferro-cement" and are ½ in thick.

During erection they are supported on scaffolding and require no actual formwork.

The units may be made in any shape and, provided allowance is made for the formation of the ribs, they lend themselves readily to the expression of any architectural form.

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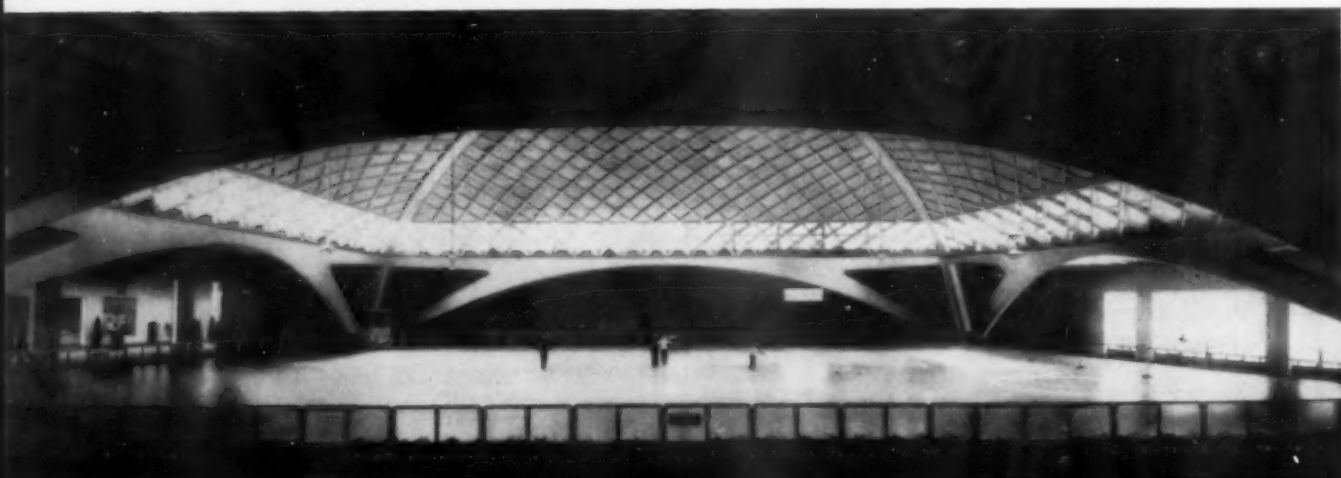
One year later, the organizing body in charge of the Turin Exhibition Hall asked my firm to submit another design and tender for a new hall, measuring 180ft by 540ft to be built close to the main hall.

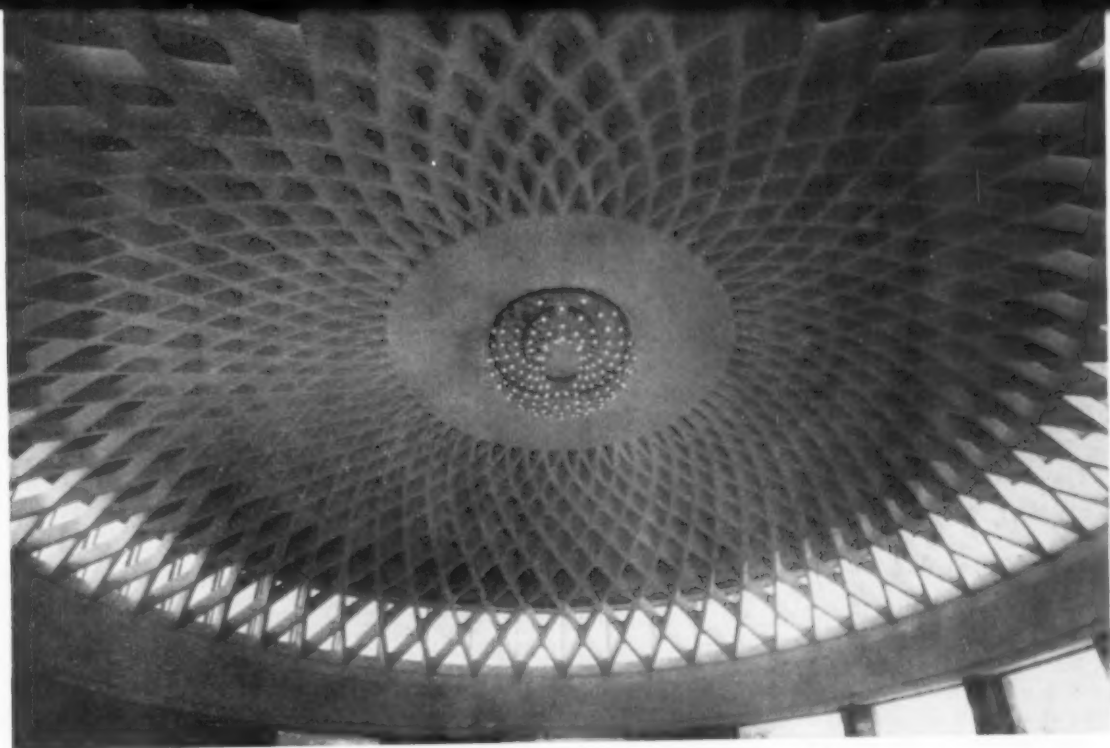
Again, the time allowed for completion was very short as the work was to be started in November, and had to be ready before the end of March.

It was again necessary to use precasting, which could conveniently be carried out in the basement of the adjoining main hall.

My design was for a hipped vault, supported by four

Interior of one of the Exhibition Halls at Turin





The elliptical roof of the hall in the new baths at Chianciano

arches on a sloping plane with a slope corresponding approximately to the thrust of the vault.

For the construction of the vault, I decided to use the same method as for the half-dome in the main exhibition building, covering the required area with precast units placed in rows parallel to the angles of the roof and allowing for a strip of glazing round the edges to provide daylighting. To obtain this daylighting, the units in this part of the roof consisted only of the channels which formed the ribs.

For the surrounding flat-roofed portion, which spans 33ft, I designed a system of corrugated beams in "ferro-cement", precast at the same time as the vault units. These beams are placed side by side and finished with a lightweight screed. Erection proved very quick and easy.

The beams in question are $\frac{3}{4}$ in thick at the top, increasing to 1 $\frac{1}{2}$ in at the soffit to provide room for the necessary reinforcement.

They were cast in concrete moulds which, in turn, had been made in a plaster mould. The visible underside of the beam, which is in contact with the form during casting, is perfectly regular and smooth, with a perfection of surface that could never be obtained by any of the usual finishing processes.

This method of construction is very adaptable; I have used it many times for curved structures and always with excellent results.

An interesting application of precasting for the construction of vaults and domes is the design I made for the elliptical roof of the hall in the New Baths at Chianciano.

The elliptical plan complicated the problem and made it necessary to prepare formwork for half the roof, but here again the method proved most satisfactory, both as regards the quality of the work which it made possible, and as regards the saving in time as compared with *in situ* work.

A new method for the construction of roofs, based on "ferro-cement" moulds mounted on travelling scaffolding, movable both horizontally and vertically, which I designed in connexion with an important competition, enabled me to free the construction of the ribbed roof from the restrictions imposed by timber formwork. This new freedom made it possible, not only to profile and position the main and secondary beams according to constructional convenience, but also to design roofs with ribs located along the isostatic lines of the principal bending moments, a design which makes possible strict adherence to the laws of statics and, therefore, makes the most efficient use of the materials.

It is interesting to observe the harmonious effect and the aesthetically satisfying result of the interplay of ribs placed in this way—a clear reminder of the mysterious affinity to be found between physical laws and our own senses.

* * *

These observations, you will notice, all point to the fundamental importance of purely constructional problems in the design of reinforced concrete structures. The buildings which I have had the pleasure of showing you would, in the main, have been impossible to build if the method of construction had not been studied from beginning to end as an integral part of the design.

I also want to emphasize that the full development of reinforced concrete, not only from the engineering, but also from the architectural point of view, is closely linked to a gradual liberation from the restrictions imposed by timber formwork, which in fact obliges the designer to conform to the pattern of timber construction, and is in direct opposition to the plasticity of form that is the most important structural and architectural characteristic of reinforced concrete. I believe that precasting, the use of "ferro-cement", and methods of roof construction with

Concrete and Structural Form

travelling "ferro-cement" formwork, may be a not unimportant step in this direction.

In closing, I should like to mention the contribution that reinforced concrete has made to the development of present-day tendencies in architecture.

After the first unfortunate attempts to adapt the new material to the structural forms of masonry or timber, reinforced concrete, spurred on by technical requirements and by its own unlimited possibilities, turned very quickly towards new structural forms, which, to the surprise of their inventors themselves, were found to possess an inherent beauty of their own.

It can be said that the most characteristic architectural forms of reinforced concrete in these last few years have been at once the cause and the consequence of a widespread orientation towards a genuinely constructional architecture, which has very quickly reached every country and every aspect of construction.

Perhaps, because we are taking part in it ourselves, we do not sufficiently realize how profound is the change between the architectural concept of the first part of this century and of the present day, and how important it is to have freed Architecture from a complex of rules and traditions which, however much they corresponded to structural reality at the time of their inception, have gradually lost any significance and become a sterile formalism.

The present moment in architecture is full of promise, but the danger of slipping into structural formalism should never be overlooked: alarming symptoms of it can already be seen in the architectural work illustrated in the periodicals of all countries.

This derives from the fact that too often, through a lack of understanding of its structural and constructional *essence*, a structure is considered solely on the basis of its external appearance—which people try to adapt to a variety of different problems both as regards dimensions and strength.

The result is always unfortunate. I am absolutely certain that the prime condition of architectural expression in a structure is the correctness and, I might say, the inevitability of its structural design.

Constructional complications, or designs that require structural acrobatics, are always a sign of a false structural conception—even to the untrained eye of the non-technical observer.

A consideration of this danger brings us to what, to my mind, is now the most important problem in architecture: the training of the Architect of tomorrow.

To deal worthily with the ever more ambitious architectural projects of the near future the architect must possess—and synthesize in himself—aesthetic sensibility, profound understanding of structural needs, and a precise knowledge of the methods, possibilities and limitations of constructional techniques.

The organization of a course of studies which could in a reasonable number of years provide such a wide and varied training is certainly a very difficult problem. But

if we cannot by suitable training succeed in uniting in the young constructor artistic sensibility, technical wisdom and knowledge of building methods, the hopes of the new architecture will be to a great extent frustrated.

Meanwhile, until such time as the training of the *complete architect* can be achieved, good results can be obtained through the sincere collaboration of different people, each contributing the specific knowledge lacked by the others.

Architect, engineer and constructor can, in this way, bring about that union of art and science that is necessary to the solution of any constructional problem.

In the last few years I have had the opportunity of collaborating with architects of great capacities and artistic sensibility, in the conception and development of several outstanding projects, and I must say that this collaboration has been carried out with mutual satisfaction and with results which I consider interesting.

I would mention in this connexion the UNESCO building in Paris, in which I collaborated with the Architects Breuer and Zehruss; the Pirelli offices in Milan, a notable architectural conception by the Architects Ponti, Fornaroli, and Rosselli, studied in collaboration with Prof. Danusso, and Engineers Valtolina and Dall'Orto; the project for the new Central Station at Naples, carried out in collaboration with the Architect Vaccaro.

I have also observed that the contribution of technical-constructional knowledge is only effective if it is brought into collaboration with the architect from the inception of the scheme; as with living creatures, it is very difficult to eliminate in the development stages any initial deficiency or malformation.

It is clear that the whole field of construction, which stretches from the cultural formation of the architect on the one hand to the industrial organization of construction on the other, is in a state of rapid and progressive development which demands a bringing up to date of both ideas and techniques.

All the efforts of those who have at heart the progress of architecture will still be inadequate to define, to study and to solve so many and such complex problems.

REPORT OF THE DISCUSSION

The discussion on Professor Nervi's lecture was opened by Ove Arup, Brian Westwood, F. J. Samuely and Edward Mills. The speakers welcomed Professor Nervi on his first visit to England and all paid tribute to his outstanding genius as an engineer and to his unusual approach to the use of reinforced concrete.

Particular interest was shown in his method of pre-casting for concrete work and in his own development of ferro-cement, which enables precast thin slabs to be used for curved roof shapes such as the one designed for the Exhibition Hall at Turin in 1948. Interest was shown in the details of this construction method which produces such exciting patterns and shapes within the building and questions were asked concerning the method of waterproofing such roofs.

All the speakers commented on the extremely high standard of concrete construction achieved in Professor Nervi's work and in response to questions it became clear that only because the Professor was also a member of the firm responsible for building the structures could he have adequate control over the building, which enabled the high quality finishes to be obtained. This method of

designer-contractor competition, which was stressed many times in Professor Nervi's paper, received considerable comment from the speakers, some of whom felt that this was the only way of encouraging new techniques and a bold approach to large scale building problems. Others, however, felt that the evidence provided in this country by the work of designer-contractor groups was not encouraging and that the key factor was the quality and ability of the designer. To ensure success, one needed Professor Nervi in charge and this was naturally not always possible. It was generally felt that the most reasonable compromise was the appointment of architect, engineer and contractor simultaneously before any work was done on a scheme, so that the three persons could work together from the beginning and develop their ideas together. The result should be an economical building and a structurally and architecturally satisfying one, provided that the engineer and architect were of sufficiently high calibre. Professor Nervi's own activities in this direction in relation to the U.N.E.S.C.O. building in Paris and other work on the Continent tended to prove the point.

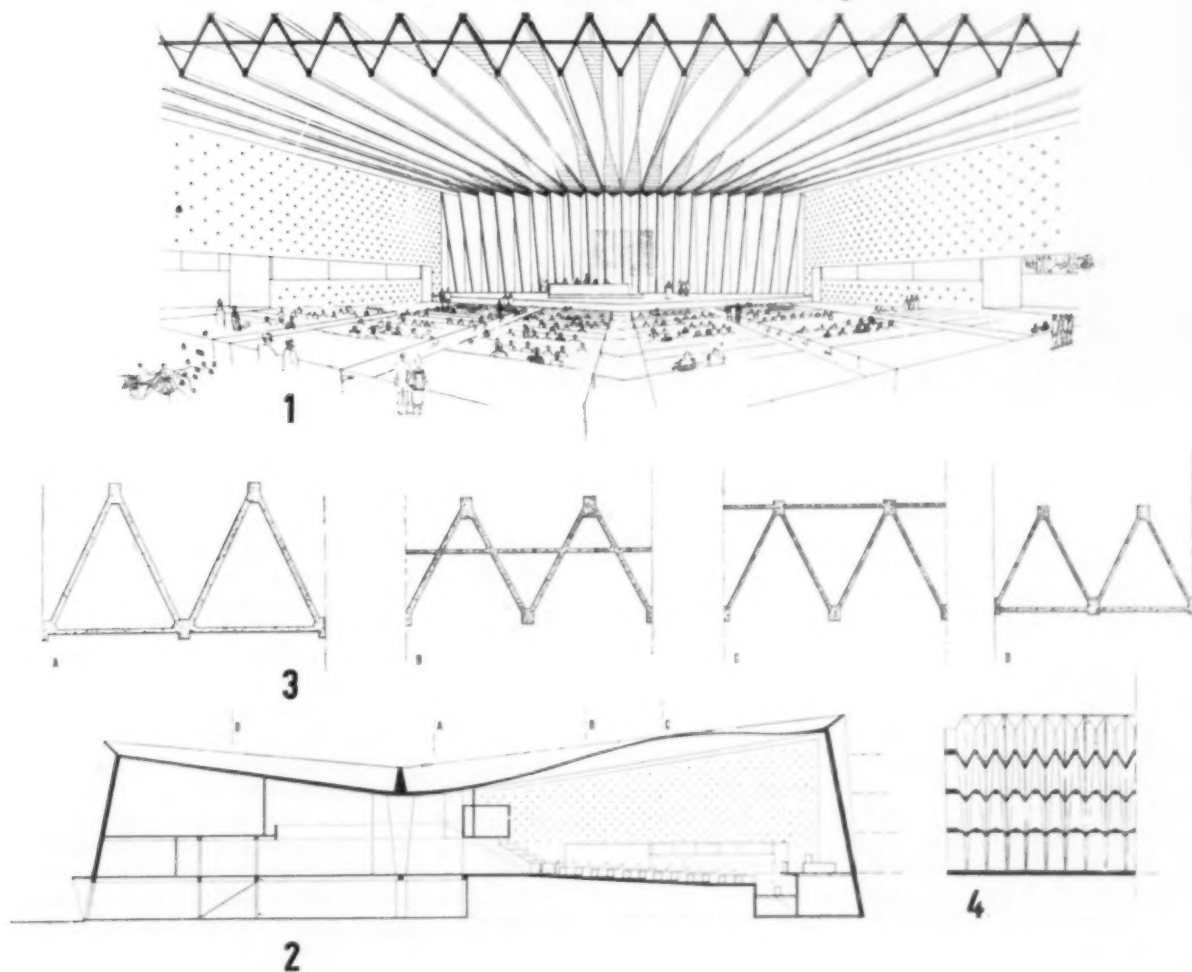
Several speakers disagreed with Professor Nervi's view "that the outward appearance of a good building cannot be anything but the visible expression of an efficient

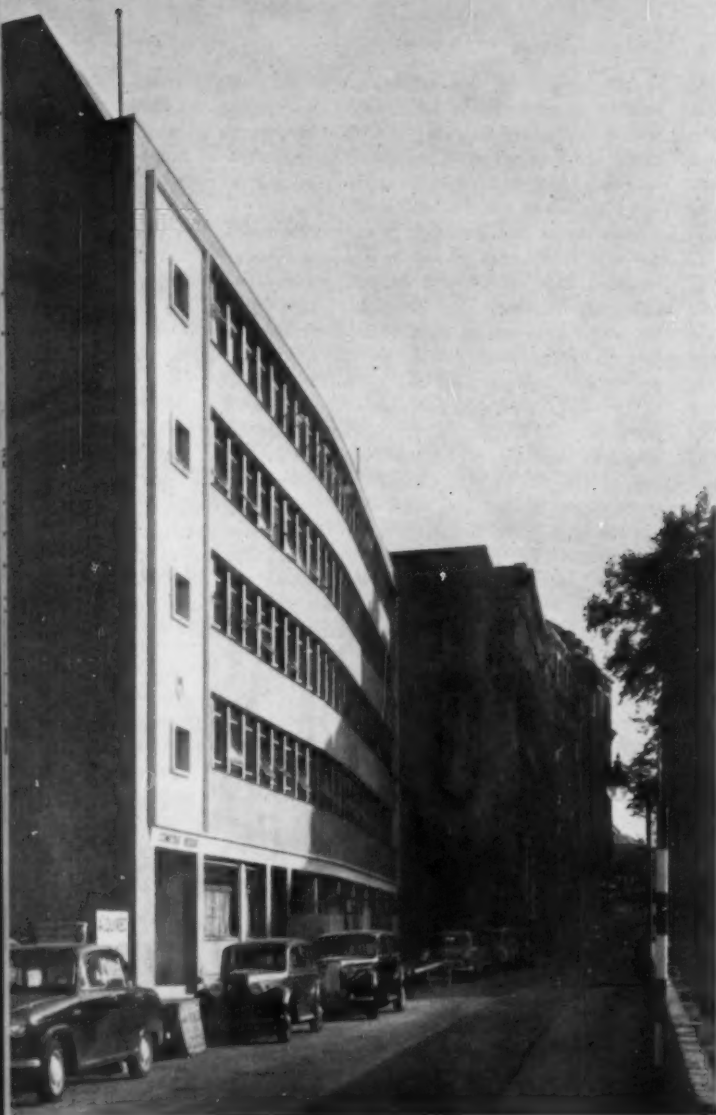
structural or constructional reality." This philosophy may still be applied to the large single cell type of building, which figures considerably in Professor Nervi's work, but could not be applied to smaller buildings such as schools, hospitals, blocks of flats or private houses, or indeed to any building of a multi-cell nature.

In spite of disagreement with Professor Nervi on the designer-constructor group, it was appreciated by various speakers that the method adopted by Professor Nervi in designing buildings and assuming full responsibility for his structures was in fact a traditional method and an interesting parallel could be seen in the work of mediaeval builders. This was all the more striking because of the visual similarity between much of Professor Nervi's work and the mediaeval Gothic cathedrals and churches. The fan vaulting in King's College Chapel, Cambridge, and in the Henry VII Chapel, Westminster Abbey, were particularly quoted and their similarity to the half-dome for the Exhibition Building in Turin was most noticeable.

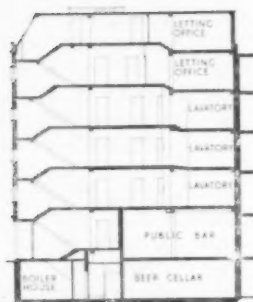
The audience filled to over-flowing the large hall at the Friends' Meeting House in Euston Road and the Chair was taken by the President of the Institution of Structural Engineers, supported by the President of the Royal Institute of British Architects.

Structure of the roof over the main hall. UNESCO building in Paris





Wood Street Elevation



SECTION & PLANS
DRAWN TO THE
SCALE: 1 in = 40 ft

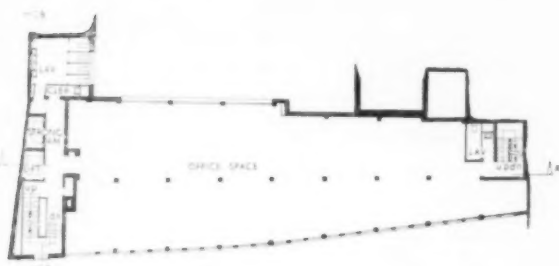
COMPTER HOUSE OFFICES

Architect:

RONALD WARD & PARTNERS

COMPTER House has been so called by the clients, Mitre Court Properties Ltd., because the site is adjacent to the original position of the Wood Street Compter (1555-1791), a sheriff's gaol for the debtors' prisons. During excavations on the site several pieces of iron grille from the old prison were found. Below the site exists a tunnel to the river which was once used for smuggling. The site also includes a right-of-way through to Mitre Court which lies immediately behind the buildings, which the planning authority insisted upon keeping.

The building has been designed as a textile house of contemporary character. The main elevation faces west on to Wood Street, a narrow road with a re-adjusted building line that gives a truncated wedge shape to the site, the narrow southerly end towards Cheapside. The original design conception of containing the four upper storeys above ground floor within a picture frame has been rigidly adhered to. The main staircase



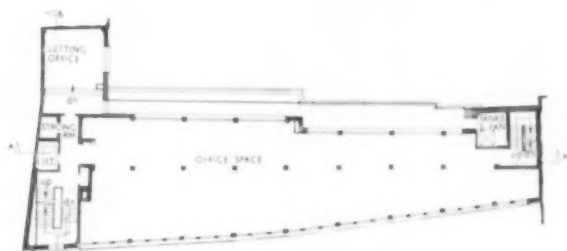
FIRST FLOOR



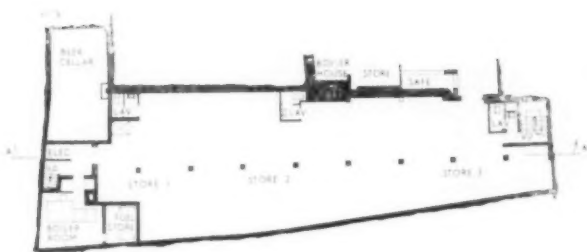
ROOF PLAN



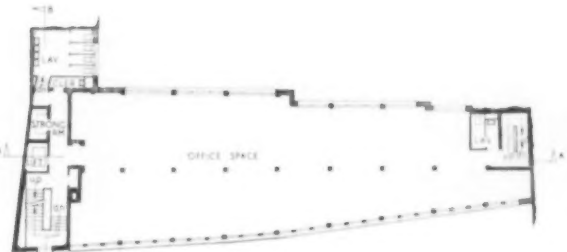
GROUND FLOOR



FOURTH FLOOR



BASEMENT PLAN



SECOND AND THIRD FLOORS

at the northern end with square windows on the half-landings is also within this compositional frame. The concrete frame is expressed at ground floor level by exposing the R.C. columns between the various shop windows.

Plan

The whole basement is used as a textile store with wooden racks from floor to ceiling. Provision has been made for a future staircase to be installed between the basement and the ground floor. This is situated in the middle of the building and the aperture, which is already trimmed, has been covered with precast concrete slabs which can easily be removed. Lavatory accommodation is provided in three positions in the basement to allow for future sub-division.

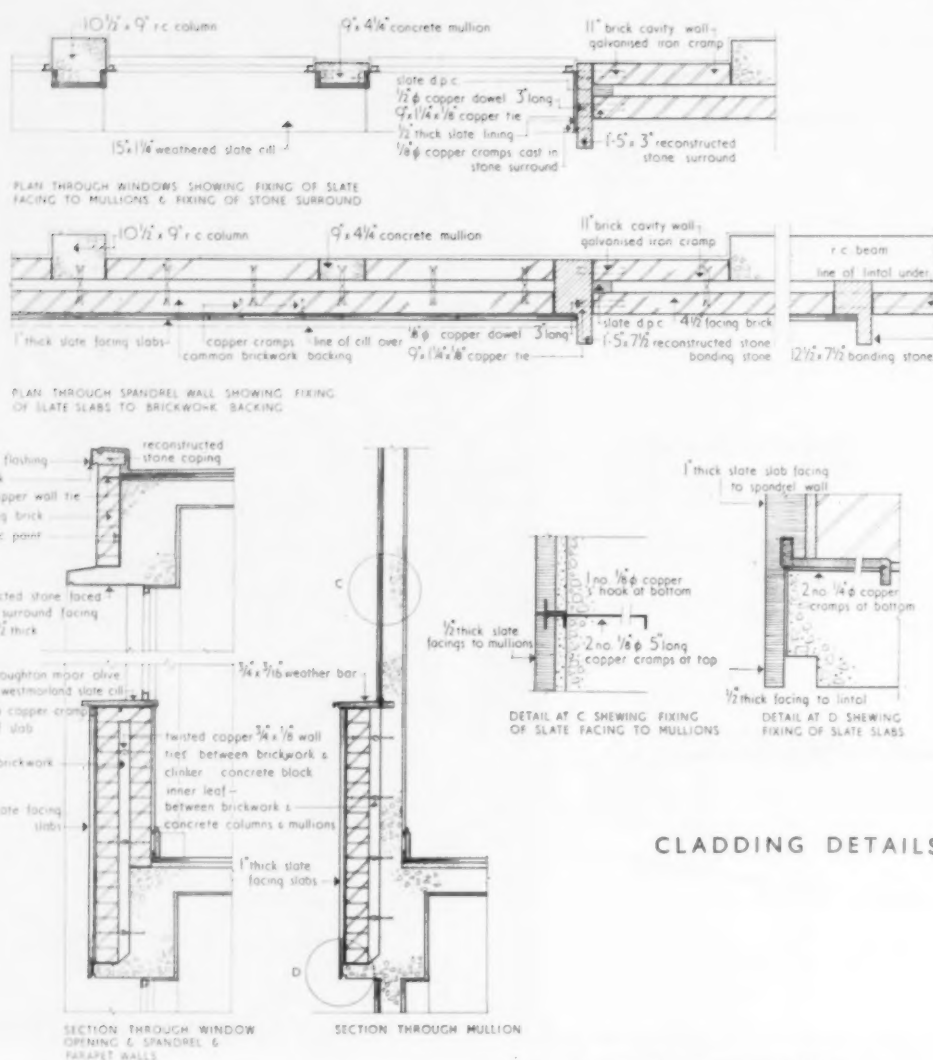
The ground floor has been divided to take the tenant in the textile industry and a bank. The main part of the upper floors is divided by light-weight partitions as required, at each level there is a main lavatory block at the north end together with a cleaner's store, strong-room and lift. There is another small lavatory on each

floor adjacent to the secondary staircase at the south end of the building.

There is access to, and across, the roof and to an external steel fire escape. The main stair continues up to a small letting office which projects over the lavatory block and which is at the moment occupied by the caretaker. Also at this level are the tank room and lift motor room. It is proposed that some form of flat accommodation will be provided in the near future on the main part of the roof to the front, thus maintaining a means of escape across the roof. The flats will be constructed in some light-weight material to minimise load and there will be adequate insulation.

Construction

Generally the construction is of the warehouse type with a reinforced concrete frame. The R.C. columns are placed north to south on a 13ft grid; owing to the shape of the site there is no regular grid from east to west. The floor to ceiling heights are generally 9ft 4in except the ground floor which is 11ft. The overall thickness of the R.C. floors is 8in.



CLADDING DETAILS

Compter House Offices

The foundations are a 24in R.C. raft with stabilizing beams to combat any movement of the London Clay subsoil. Floors and roof are reinforced concrete. The party walls are 13½in brickwork, the rest 11in cavity work. The exterior leaf of facing brick or flintons with stone cladding, the interior leaf 4½in or 4in cellular concrete block.

The basement walls are a brick and concrete sandwich with 1½in asphalt tanking in three layers between. This is aided by a waterproof rendering internally. Internal partitions to the offices are of cellular concrete bricks or Gyproc. The main chimney flue runs up the inside of the building by the fire-check wall and has a Fosasil boiler-flue lining. The doors through the fire screen wall have a double rolling shutter and a self closing single swing door. Windows abutting this wall have fire-resisting glazing. The roof is in 6in R.C. slabs screeded to falls on building paper and ½in insulation board.



General Contractor:

Dove Bros.

SUB-CONTRACTORS:

Armour Cast Door:
Pilkington Bros.
Asphalte Roofing:
Val de Travers Asphalte Paving Co. Ltd.
Balustrading and Guardrails:
Grundy Arnatt Ltd.
Bricks:
Henry Greenham (1929) Ltd.
Clay Tiles:
Langley (London) Ltd.
Cold Glaze Wall Finishes:
Robbs' Cement Enamel Finishes Ltd.
Concrete Piles:
Franki Compressed Pile Co. Ltd.
Electrical Installations:
Johnson Pearce & Co. Ltd.
Fireproof Doors:
Dreadnought Fireproof Doors (1930) Ltd.
Glasscrete:
J. A. King & Co. Ltd.
Granolithic Flooring:
Stuarts Granolithic Co. Ltd.
Heating, Plumbing, Drainage and Ventilation
Services:
Ellis (Kensington) Ltd.
Ironmongery:
Teuton Davis-Bennett Ltd.
Joinery:
R. Cattle Ltd.
Marble Walls and Pavings:
Anslem Odling & Sons Ltd.
Partitions:
Gyproc Plaster Co. Ltd.
Luxfer Ltd. (Water Closets)
Plastering:
Thomas Webster & Co. Ltd.
Reconstructed Stone and Ashlar Dressings:
Empire Stone Co. Ltd.
Rolling Shutters:
Haskins Ltd.
Slate Facings and Cills:
Setchell & Sons Ltd.
Sanitary Fittings:
John Bolding & Sons Ltd.
Slates:
Broughton Moor Green Slate Quarries Ltd.
Steel Reinforcement:
Trussed Concrete Steel Co. Ltd.
Ventilation Grilles:
F. H. Biddle Ltd.
Windows (Metal):
Allan H. Williams Ltd.
Wood Block Flooring:
Horsley Smith & Co. (Hayes) Ltd.



The main entrance, a detail of the composite mail-box and flower trough is shown below.

Finishes

Floor finishes generally are wood block in the offices, terrazzo on the stairs, clay tiles in the lavatories and 1½ in granolithic in the basement. Walls generally are plastered and painted internally. Lavatories and tea rooms have 6 in x 6 in white glazed tile splash backs with window boards in grey Delabole slate. The entrance hall has a marble lining up to the first half-landing and a glazed timber screen and flower box to the street. Exterior wall finishes are, in the right-of-way, glazed white bricks, elsewhere facing bricks. The front elevation has 1 in Westmorland slate cladding beneath the windows and 3 in reconstructed stone slabs to the staircase. The roof is finished with ½ in asphalt lap-jointed, laid in two layers on one layer of bituminous felt.

The crest over the main entrance is that of the Mercers Company.

Services

The central heating system is heated by oil fired boilers in the basement. Advantage has been taken of the irregular plan form to accommodate the ducts.

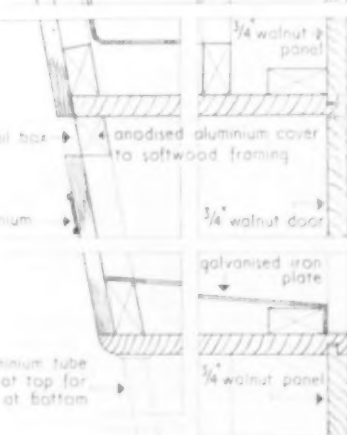
2¼ x 1" teak capping
to match screen posts



7 x 1½" opening to mail box

4 x 2" anodised aluminium
name plate holder

¾" o.d. anodised aluminium tube
support with flange at top for
screw fixing & dome at bottom



School Furniture

IN the issue of the 8th September I wrote about the South African Building Research Institute's recommendations for school furniture and expressed the hope that the work of the B.S.I. Committee, which has been proceeding for some long time, might commence to appear shortly.

At a recent press conference, which included a very interesting demonstration, the issue of the first work of the Committee, namely B.S.2639, "School dining tables and chairs" was announced. This B.S. covers school dining tables and chairs but the same furniture is equally applicable to other school uses. The important factor was the demonstration of the sizes adopted as the outcome of a series of anthropometric studies of children.

It is understood that these anthropometric studies are to serve as the basis of the whole of the B.S.I. school furniture work. It was said that B.S.I. hoped to publish separately a full report on these studies as a B.S. for furniture is not the place to set out details of the work which led up to the conclusions incorporated in a B.S. for a particular subject since it is not all users of the B.S. who will be wanting to read why the given dimensions were adopted.

It seemed unfortunate that the statements made and the demonstration should appear to indicate that the subject of correct posture and heights of furniture had hardly been studied before in this country or even at B.S.I. as many connected with education have been fully aware of their importance for many years. It would equally seem that those concerned with this study had never heard of, and certainly had not studied, the earlier B.S., namely BS/MOE 11-22, for which the Ministries of Education and Works carried out a great deal of practical research on posture, including the desirable shaping of chair seats, which does not seem to figure very prominently in the findings of this new study. The appreciation of the need to provide furniture of correct shapes and sizes is certainly not new to those responsible for State education even if it is less well appre-

ciated in private schools if the furniture of this later group is examined. The very poor and antiquated examples used at the demonstration as contrast to the prototypes made to the new B.S. were by no means representative of the equipment of many schools furnished or re-furnished in the inter-war years and certainly not of a great many of the post-war schools.

It is very interesting to compare the recommendations of this B.S. with those of the South African recommendation. Both lay down basic dimensions only and do not standardize design.

Both express the hope that they will develop performance tests for the furniture to ensure that it is adequately constructed to withstand the type of usage to which it is to be put. By no means will it be easy to evolve performance type tests for furniture of this nature as they will need to represent hard and careless usage over a useful life of very many years. The tests will need to be much more thorough than the present B.S. tests for domestic furniture and to be much more complete; it has to be remembered that the present B.S. tests are intended to cover only a minimum durability of the construction and do not take account of the suitability of the articles for their purpose and also only, unfortunately, take care of furniture made of wood. Until the performance tests have been devised the B.S. lays down certain requirements relating to construction coupled with a makers' guarantee which consists of an assurance of replacement of defective articles if they fail within 12 months. One wonders if this is a sufficiently long period and who decides if the failure is such that the makers should replace the article—it is to be hoped that buyers and sellers will use B.S.I. as their referee. Even when type tests based on performance are available it is questionable if these will be adequate without some form of modified testing of every article as workmanship and materials are so variable from article to article however similar they may be in appearance.

The B.S. opens with a general section giving clauses on materials covering timber, plywood, hard-board, chipboard, linoleum, plastics, sheet veneers and metals. A long clause is devoted to finish but unfortunately these are far from precise as purchasing requirements, especially in regard to timber products. Articles have to be marked for size according to a colour identification scheme, one mark being given to horizontal seat types and a double mark to types with sloping seats; these marks have to be visible when the chairs and tables are in use.

The second section covers a range of sizes for tables. Makers are asked to have a range of different shapes for which no suggestions are made excepting that the range has to include small rectangular tables capable of being grouped so that they may serve as dual purpose tables for classrooms or the dining rooms. Provision is made for stackable tables and for folding and detachable legs. Treatment of legs to limit noise is only a requirement when requested by the purchaser. Two ranges of table heights are provided for use with chairs having level seats and those with sloping seats, each range has five heights. The sizes of tops are based on providing given minimum areas and lengths of perimeters for each user, depending on the type of service and the table shape.

The third section applies to chairs. Five heights are given with related dimensional requirements for the seats and backs. Requirements are given to reduce damage to chairs knocked over or pushed against walls but no requirement is given to minimize tipping over backwards. On the subject of the seat and back shapes this B.S. seems to be a step backwards as seats may be horizontal without shaping and therefore providing the maximum of discomfort or sloped without shaping which are only a little better. The previous BS/MOE 11-22 made an attempt to provide some degree of comfort to the sitter by laying down shaping for seats and backs. As to backs these may be flat or curved which again seems to have

School Furniture

dodged a major problem. South Africa provided 7 heights of seat in 1in rises from 11in to 17in, whereas the B.S. has 5 heights ranging from 11in to 17½in in 1½in rises, except in the last size where the rise is 2in resulting in a chair which might be more useful if it had been only 17in high. It is difficult to see the justification for doubling production of both chairs and tables by having horizontal and sloping seats—surely one shape, namely sloping, as in South Africa, is enough unless alternative better seat sections are provided. It is interesting to note that the U.K. committee recommends an angle of the slope of the back to the seat of 95°, which is reduced to 90° if the seats are sloped, whereas South Africa recommends 98° to a seat sloping backwards ½in in all sizes, having proved in their field trials that 95° provided a too alert position and over 100° a too relaxed and lolling position, so they compromised on 98°.

The South African researches led to a recommendation to abandon rails between the front legs as they got in the way of the legs when these are pushed under the seat but the B.S. only calls for minimum clearance from the floor and it seems that this may still be detrimental to comfort.

The seat and table heights seem to be good in the B.S., except the topmost size, and rightly err on the lower side of ideal heights to accommodate groups of children. The 5 heights seems to be adequate and the 7 in the South African scheme rather too many for easy distribution among the pupils.

The appendix on distribution of sizes in schools of various types should be a very great help to purchasers.

An examination of this B.S. leaves one with a slight feeling that, because of the desire not to lay down precise designs, which is very laudible, the committee had difficulty in making up its mind as to what it really wanted and what the purchasers could afford and for this reason the findings of the South African report are more satisfying. The manufacturer is left to do much querying as to what the purchaser may want within the limits laid

down because the choice is too wide. The standard in most respects is an advance on the previous one although more attention to increased comfort of seats seems very desirable as a future consideration.

DUTCH UNCLE.

Economy in the use of cement

A total of 3,630 tons of cement was saved on Ministry of Works sites in the placing of 124,482 cubic yards of concrete on 70 sites during the year ended April 30 last. This economy was achieved by having concrete placed according to guaranteed strength specifications and mix design methods used by the Ministry instead of in the manner that earlier standard specifications would have required. (See also *Cement Economy and Improved Concrete*.)

Altogether 117 different concrete mixes were required and on all but six sites these were designed at the contractors' request by the Ministry's engineers. The Ministry would like to see more contractors designing these mixes themselves to suit materials locally available.

The new guaranteed strength standards call for compaction by high frequency vibration for all quality-controlled concrete. It has been noted with satisfaction that contractors are tending to use vibration even when this is not specified.

For compacting thin slabs in contact with the ground the most suitable process seems to be the vibrating roller. The Ministry hopes to extend the use of its specification for consolidation of this kind. Formerly this technique was practised only on roads; now it is being adopted for floors.

The Ministry has acquired an ultrasonic instrument, such as has already been applied satisfactorily in steel work, for testing the strength and quality of concrete after it has been placed. The instrument is being used on sites of different types so that its potentialities may be explored.

Two films on the design of concrete mixes and vibrated concrete have recently been made by the Ministry under the Conditional Aid Programme, and it is hoped that they will soon be available to local associations, supervising grades, and operatives. The titles of the films, each of which runs for approximately 10 minutes, are:—

Designing a Concrete Mix. (Illustrates a selection of aggregates, tests, and trial mixes to determine the most suitable mix for a required strength.)

Vibrated Concrete on a Building Site. (Shows new ways of achieving economies in labour, materials, and shuttering. An immersion vibrator and a power float are seen at work.)

Information on the possibility of seeing these films locally can be obtained from the Regional Technical Information Officer at the nearest Ministry of Works Regional Office.

George VI Memorial Fellowships

Among the candidates recently presented for the degree of Master of Architecture at the Carnegie Institute of Technology, Pittsburg, was Mr. R. E. Williams, A.R.I.B.A., who had completed a year's post-graduate study of industrial architecture.

Mr. Williams is a former student of the L.C.C.'s Brixton School of Building where he completed the full-time course in architecture in 1954. He passed the R.I.B.A. final examination in July of that year and was awarded a George VI Memorial Fellowship which enabled him to undertake a year's post-graduate study in the United States.

Another former Brixton student, Mr. D. J. T. Shears, whose home is in Brixton, S.W.2, was awarded a George VI Memorial Fellowship this year and is at present pursuing a course in industrial management in the post-graduate school of Cornell University. Mr. Shears took the "sandwich" course in building at Brixton and obtained his higher national diploma this year.

Requests for further details should be addressed to the Principal of the School (Mr. D. A. G. Reid, telephone number BRIXton 2068).

Central Advisory Water Com. revived

Meetings of the Central Advisory Water Committee, appointed by the Minister of Housing and Local Government, are being resumed, and the first will be held on October 31. The Minister, Mr. Duncan Sandys, is chairman of the Committee, and the vice-chairman is the Parliamentary Secretary, Mr. William Deedes.

The Committee was first set up in 1946, under the Water Act, 1945, and has issued a series of reports on river pollution, water softening, gathering grounds and land drainage. Its sittings were suspended in 1952, and its revival has necessitated the appointments of new members, the terms of appointment of the previous members having lapsed. Among the 24 members are water engineers, industrialists, scientists, and members of River Boards.

Secretary: Miss M. E. Petzsche, Ministry of Housing and Local Government.

Assistant Secretary: Mr. G. D. Vaughan, Ministry of Housing and Local Government.

MOSAICS

FITTINGS WASHING MACHINES ETC. C2/30



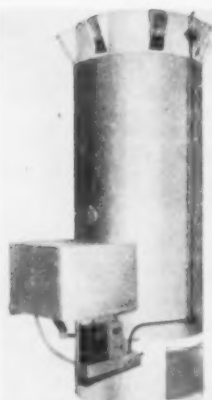
The Scales "Fairy" electric washing machine, by W. & S. Summerscales Ltd., of P.O. Box No. 12, Parkside Works, Keighley has a dry clothes capacity of 8 lbs. The 12 in x 2 in rubber roller wringer folds into the tub when not in use. So does the aluminium extension mangling tray which is attached to the wringer. Heated and non-heated models are available, both for A.C. supply. The non-heated model can also be obtained for D.C. supply. A wire basket for the wringing of rinsed clothes can be attached to the top of the washer without interfering with the washing action. Dimensions: 30 in x 17 in x 17 in. Finish: white stove enamel.

SERVICES LIGHTING FITTINGS B1/90.



This flame proof pendant unit No. F9792A has been produced by Holophane Ltd., of Elverton Street, London, S.W.1. The unit carries a Buxton Certificate for gas group II and III and combines the necessary robust construction with accurate control of the light by means of an internal reflector and front asymmetric lens giving a directional light distribution. The glass is smooth externally and the cast aluminium body is free of ledges and crevices where explosive matter might lodge. Developed primarily for lighting of control panels in oil refineries. The units can also be supplied with an additional flange designed to facilitate recessed ceiling mounting. For use with G.L.S. tungsten filament lamps up to and including 200 watts, together with 125 watt MB V mercury discharge lamps and both 160 and 200 watt MBT U blended mercury tungsten lamps.

SERVICES HEATING B3/77



The "Hetedaire" oil fired heating and ventilating unit is manufactured by Carricks (London) Ltd., of 8 Bulmer Mews, London, W.11. It has a furnace chamber from which the gases are drawn into the heat exchanger and then through an adjustable damper to the atmosphere. A fan chamber, in the base of the unit, houses a slow speed, thermostatically controlled fan. Air from either inside or outside, is drawn in and forced between the combustion chamber and external wall of the unit. Following this preheating the air enters the heat exchanger, from which it obtains maximum heat and then enters the diffuser casing and through special apertures to the building. Rated output is 425,000 B.Th.U.'s per hour. Fuel consumption with gas oil at 19,000 B.Th.U.'s per lb. is 3½ galls. per hour. Coke fired units are also available. Makers provide a surveying service and also submit complete space heating plans.

PLANT MISCELLANEOUS E16/5



A new family type battery charger is now available from The General Electric Co. Ltd., of Magnet House, Kingsway, London, W.C.2. It is suitable for 2, 6 or 12v. batteries (charging 1, 2, 3 or 6 cells) and operates at a maximum charging rate of 2½ amps. The front panel carries plugs and sockets for different battery voltages. Input supply is CO 250 v., 40 60 cycles but 2chargers for a supply of 100 125 v.,

40. 60 cycles can be supplied. The lower output current has enabled the size of the double wound transformer and selenium bridge rectifier to be reduced so that a relatively greater cooling area is provided in the charger casing than in the previous model. A fixed ballast resistance in the circuit limits the charging current and prevents damage to the unit or battery on charge. A meter shows maximum current setting. Dimensions 9 in x 5 in x 5 3/8 in. Full load consumption: 50 watts. Finish: hammered green enamel.

INDUSTRIAL NOTES

● The Impact of Science on Management in the Future is the theme of the British Institute of Management National Conference at Harrogate from the 2nd to 4th November. The speakers who will address the opening and closing plenary sessions will be Sir Harold Hartley, K.C.V.O., M.C., F.R.S., and Mr. Graham Hutton, O.B.E. The conference programme aims at striking a balance between a study of the new scientific developments themselves and a discussion of the human problems arising out of them. Special attention will be paid to the need for more widespread education and training of managers to meet the requirements of the future. Between 800 and 1,000 top managers will be attending the conference.

● Thomas De La Rue & Company Ltd. have, although the demand for pastel shades is still very great, introduced the following five new plain colours, in addition to the existing plain colour black: French Blue, Citron Yellow, Beige, Cherry Red, Charcoal Grey. The retail price will be slightly higher than that for the current range of Formica patterns.

● The Charterhouse Finance Corporation Limited announces that in the issue to Shareholders by Jenson & Nicholson Group Limited of 488,000 Ordinary Shares of 5s. each at 15s. per share, 466,419 shares were accepted by way of rights, whilst applications for excess shares were received for 196,595 shares.

● The Standardised Disinfectants Company Limited are now producing two organic solvent type wood preservatives in addition to their tar-oil type preservative Brunolinum. The new preservatives, Brunophen No. 1 and Brunophen No. 2, contain 5 per cent. Monsanto pentachlorophenol and, it is claimed, are penetrating liquids which do not stain the wood. Brunophen No. 1 is a general duty preservative, whilst Brunophen No. 2 is a quick-drying material for surface application to timber which will subsequently be painted or given some other finish. It is claimed that fibre board is rendered termite-proof and rot-proof by treatment by Brunophen No. 2. Further details can be obtained from the Standardised Disinfectants Company, 23, Sloane Street, London, S.W.1.

● Polycell Products Ltd., manufacturers of Polycell and Polyline, are moving on November 1 from their present premises in Kentish Town, London, to a larger factory at 84, Albert Road, London, N.1. Mr. Geoffrey Brewer leaves the Alfred Pemberton Ltd. Advertising Agency, on whose behalf he has conducted Polycell advertising and sales promotion since the company began its national sales campaign a year ago, to join them as General Manager.

● Tretol Associated Products Ltd. have issued the first number of "Flooring Topics" which will appear quarterly and is devoted to floorlaying and maintenance. The articles in this first issue include a survey of types of damp-proof membranes for concrete floors, a description of the methods of sealing timber floors and a summary of the technique of linoleum laying. Copies can be obtained, free of charge, from Tretol Associated Products Ltd., Tretol House, The Hyde, London, N.W.9. Telephone COLindale 7223.

Smoke Abatement



* CLEAR SKIES ABOVE WITH GLOWING WARMTH BELOW!

FOREIGNERS may laugh at the British insistence on an open fire—but they don't have to live in our climate. People *must* have something to sit around in the winter; the architect or builder can, however, ensure that this comfort is achieved without masses of black smoke.

The simplest way to do this is to specify Flavel smokeless fuel fires. They give cosy, smokeless warmth for months on end with little attention—yet this efficiency is achieved with real economy, for the well-tried Flavel design has been proved to save on fuel bills. This is why public authorities all over Great Britain are continually ordering Flavel smokeless fuel fires for new development schemes. The Ministry of Fuel & Power long ago gave official approval to these Flavel Fires.

TWO MODELS

The two models available at once for bulk delivery are the 'Newbold' and 'Flavel Seymour'. Both are modestly priced — and obtainable in a range of varied and gleaming colours. They are styled very simply to blend with either conventional or contemporary decoration schemes. Heavy-duty fire bars are an excellent Flavel feature which add considerably to the life of the fires. Built-in gas ignition can be supplied if required. A popular feature of the 'Flavel Seymour' is the movable apron that drops to form a shelf and to expose the lowest part of the fire. Insulation in the well of these grates is obtained by an air pocket thereby avoiding the use of fire bricks which, in replacement, can prove very costly.

** The 'NEWBOLD' and 'Flavel SEYMOUR' burn best on smokeless fuel but they can use any solid fuel.*

SMOKELESS SINCE 1920's

Both the 'Newbold' and 'Flavel Seymour' grates are constructed on the principles with which Flavel pioneered smokeless grates in the 1920's. Flavel fires can be accurately controlled over a wide range of temperatures to give out a continuous heat; this is delivered at near-floor level so that the whole room is warmed and practically no heat is wasted. For new constructions, Flavels also manufacture a complete range of other labour-saving appliances, details and prices of which will be sent on request — or your nearest Flavel stockist will gladly give you any further information you may require.

SIDNEY FLAVEL & COMPANY LIMITED • LEAMINGTON SPA

See a FLAVEL first

Telephone: 100 (Head Office) 3091 (Sales Office) Telegrams: FLAVELS



Talking of flying saucers

Why ?

Mainly to introduce the fact that Carlite (Perlited) pre-mixed plaster is as far ahead of ordinary plasters, as flying saucers are of standard aircraft.

What can Perlited Carlite do that is so remarkable ?

It has tremendous advantages because of its lightness. Perlited Carlite weighs only a third as much as sand-based plasters. Reduction in heavy work increases the plasterer's output. Many incidental expenses are reduced. With all this the cost is well within the scope of any type of contract.

Does Perlited Carlite do a good job ?

The best. It's especially strong, and resistant to cracking, with a high thermal insulation value.

Do architects approve of Perlited Carlite ?

Indeed they do. I specify it regularly myself. I know that the quality never varies.

CARLITE *perlited pre-mixed plaster*



For full details write to : The Gotham Company Ltd., Gotham, Nottingham
The Carlisle Plaster & Cement Co., Cocklakes, Carlisle

CURRENT MARKET PRICES (LONDON)

(These prices apply to material purchased in the quantities named or otherwise as might be expected)
for a new building of moderate size.

October, 1955

AGGREGATES AND SAND

1½ inch—all in—ballast	23/-	Yard cube
1 inch do.	24/-	delivered
1 inch screened shingle	21/-	(in five yard
1 inch do.	22/9	loads or
1 inch granite chippings	45/-	more)
Sharp washed sand	23/2	
Pit sand	22/3	
Building sand	22/-	
Broken brick	18/6	
1½ inch shingle	22/-	
Cartage of muck	8/-	

BUILDING MATERIALS AS DESCRIBED, CENTRAL LONDON

CEMENTS packed in paper bags	Per ton
Portland in 6 ton lots	101/6
Do., from 1 ton to 5 tons 19 cwt do.	113/6
Do., Rapid hardening (6 ton lots)	112/-
Do. (but 1 ton to 5 ton 19 cwt)	124/-
Cement "Aquacrete" (do.)	146/-
Do., "417" or "Polar" (do.)	146/-
Do., "White" 1 ton (lots)	262/-

LIME—	132/- (1 ton loads) deliv'd
Hydrated .. including ..	129/6 (2/3 do.) do.
and .. paper ..	119/6 (4/5 do.) do.
Ground .. bags ..	117/6 (6 do.) do.

PLASTER—

Keenes, coarse, pink (2 ton lots)	198/9 ton
Do. do. white (do.)	204/3 do.
Sirapite, do. (2 ton to 3 ton 19 cwt lots)	147/3 do.
Do. finish (do.)	155/3 do.
Hardwall, do. (do.)	158/9 do.
Plaster, coarse, pink (do.)	145/- do.
Do. do. white (do.)	153/3 do.
½ in Plaster baseboard (25 to 75 yards)	3/- Yard Sup.
½ in Do. (150 to 299 yards)	2/8 do.
¾ in Jute scrim (100 yd. roll)	8/- each
Cow hair (under 3 cwt)	97/6 cwt.

FIRECLAY—

Stourbridge, loose (1 ton lots)	168/9 ton delivered
Fire cement	12/3 14 lb.

BRICKS

BACKING BRICKS (in truck loads)—

Flettons	113/- per 1,000 delivered
Do. Keyed	115/- do.
Do. bullnose	133/- do.
Blue wirecuts	510/6 do.
White	192/- do.
Southwater engineering (No. 1)	379/- do.
Firebricks—2½ inch	72/6 per 100 delivered
Do. —3 inch	89/6 do.

STOCK BRICKS—

Mild stocks	181/6 per 1,000 at Works
Second, do.	216/- do.
First, do.	237/- do.
Add for delivery—approx. 45/- per 1,000 in lorry loads.	

FACINGS (ex truck or lorry)—

Rustics	138/- per 1,000 delivered
White	210/- do.
Blue pressed, 2½ in	562/- do.
Do. bullnose	576/- do.
Reds (Multi sand faced)	310/- do.
White glazed stretchers	1504/- do.
Do. headers	1480/6 do.
Do. bullnose	1880/- do.
Do. double stretchers	1997/6 do.
Do. double headers	1821/3 do.
Breeze fixing bricks	29/- per 100
Fire tiles and lumps	33/- foot cube
Wall ties—8" x ½" x ¾", black	63/- per cwt.
Cement mortar (1 : 3) hand-made	92/- yard cube

BRICKLAYERS' SUNDRIES—

AIR BRICKS	9 x 3in	9 x 6in	9 x 9in	12 x 9in
Iron .. each	2/1	3/4	5/-	6/8
Galvanized do. do.	3/6	5/10	8/8	11/7
Terra Cotta .. do.	1/3	2/7	5/6	10/10
Chimney pots, Terra Cotta (11 to 25) do.	1ft 7/3	2ft 12/8	3ft 28/9	4ft 49/9

PARTITIONS—

18in x 9in Blocks keyed for plastering.				
Per yard super in 6 ton lots	2in	2½ in	3in	
In solid clinker including any half blocks	3/9	4/4	5/3	
In cellular clinker blocks	3/11	4/7	5/3	
In hollow clay blocks	4/4	4/7	5/4	

Clinker blocks in small quantity .. 5/7 6/7 7/11
Intermediate quantities in all types may be had at intermediate prices.
Smooth in lieu of keyed faces extra cost per side 3d. per yd. super

SINKS—

Fireclay white glazed in and out—standard quality			
	24 x 18in	30 x 18in	30 x 20in
London pattern, no overflow, 6in deep	72/6	90/9	96/-
Belfast, plain edge, 10in deep	84/3	143/9	192/9

FLUE LININGS, PLAIN, CIRCULAR—

	Foot lineal	Each
	Straight	Bends
9in diameter	3/11	11/9
10in do.	4/11	14/9
12in do.	9/5	28/3
9in diameter, beaded end, 12in high		5/4

FLUE PIPES AND FITTINGS—

	4in	5in	6in
Heavy asbestos type, 6ft length	15/3	21/-	26/6
Do. 3ft. length	7/8	10/6	13/3
Do. bends	5/9	7/3	8/8
Light asbestos type, 6ft length	12/6	15/9	21/-
Do. 3ft length	6/3	7/11	10/6
Bends	4/7	5/9	6/11
Baffler	12/5	14/9	15/8

DRAINAGE GOODS

GLAZED STONEWARE STANDARD LIST

	4in	6in	9in
ORDINARY TYPE—EACH			
Pipes in 2 feet lengths	1/8	2/6	4/6
Bends	2/6	3/9	10/1½
Junctions (4in on 4in, 6in on 6in, 9in on 9in)	4/2	6/3	13/6
Gullies with 4in outlets	6/3	6/10½	11/3
4in horizontal inlets	2/-	3/-	5/-
4in vertical ditto	3/-	4/-	7/-
Black iron grids	9d	1/5	2/9

Adjustment to Current Cost

2 ton lots or more Less than 2 ton lots

"Best" pipes and fittings. Percentages to add	100 pieces or more	Under 100 pieces
	85%	117½%
Further percentages to be independently added in respect of:		130%
British Standard pipes, etc., 10. "Best" Tested pipes, 37½.		
British Standard Tested, 47½.		

IRON DRAINAGE GOODS—

Each	4in	6in
Cast iron pipes, 9 feet long	71/3	105/-
Do. 6 feet do.	51/2	79/10
Do. 4 feet do.	39/8	62/-
Do. 2 feet do.	24/3	36/10
Short bend	17/-	44/4
Junction	29/7	61/10

CURRENT MARKET PRICES (Continued)

DRAINAGE GOODS—Continued

GULLEY PARTS—	4in	6in
Traps, high level, invert	29/7	80/1 each
Inlet, bellmouth pattern	15/8	31/2 do.
Do. with one vertical branch ..	27/2	50/9 do.
Do. with two do.	73/8	107/2 do.
Extra for Sealed cover	9/6	12/3 do.

RAINWATER SHOES

	4in	6in
With vertical inlet and rebated top ..	39/3	78/2 each
Extension piece, 6in high	20/5	20/5 do.
Flat loose coated grating	4/-	4/- do.
Loose solid coated cover	5/5	5/5 do.

MANHOLE CHANNELS, WHITE GLAZED—

Each	4in	6in	9in
Straight, 2 feet long	16/6	23/6	40/-
Taper, ditto	27/6	27/6	41/3
Bends, main, half section	31/9	45/6	74/6
Ditto, branch, ditto	19/3	27/6	—
Ditto, ditto, three quarters, ditto ..	27/6	42/9	—
Junctions, single	26/3	45/6	—
Ditto, double	35/9	62/-	—

BROWN GLAZED CHANNELS—

Based on standard list (less than 100 pieces)

	4in	6in	9in
Half-round main channel (2ft long) ..	2/9	4/2	7/4
Extra for stop ends	2/9	4/2	7/4
Extra for outlets	5/5	8/2	—
Channel bends with splayed ends ..	8/2	12/3	—
Three-quarter section do.	10/10	16/4	—

MANHOLE COVERS—

	Black
24 × 18in Light foot traffic	29/6 each
Do. Strong do.	40/- do.
Do. Light car traffic	105/- do.
Do. Road traffic	160/- do.

SUNDRIES—

	Galvanized
Manhole steps	8/2 each
4in Mica valve fresh air inlets (L.C.C.)	28/- do.
Plumber's hemp	7/3 per lb.
Gaskin, caulking	1/5½ do.
Canvas backed hair felt, 4in wide ..	9d. per ft. run

ROOFING MATERIALS

WELSH SLATES (delivered)—

Sizes in inches	Full Loads	Quantity per 1,000	1 to 99
22 × 11	1920/-	262/-	34/6
20 × 10	1700/-	230/-	30/3
18 × 10	1240/-	163/-	21/6
16 × 10	1020/-	132/2	17/6
14 × 9	780/-	90/9	12/-
14 × 4½	347/-	40/3	5/3

TILES (Broseley and Staffordshire)—

	per 1,000	per 100
10½ × 6½ Machine made	317/-	39/-
Do., hand made, sand faced	387/6	46/6
Hips, valleys and angles	31/-	per dozen
Plain concrete tiles	177/-	19/6

Sheeting asbestos corrugated, 6in pitch	7/6 yard super
4½in × 16 gauge, drive screws (galvanized) ..	17/- gross
7½ × ½ hook bolts and nuts (do.) ..	51/6 do.
Washers, round, flat galvanized	4/9 do.
Do. do. bituminous	2/- do.

ROOFING FELT—

	1/- Yard Super
Sanded bitumen felt (55lb)	1/6 do.
Ditto, but 75lb in weight	3/- do.
Inodorous felt, best quality	2/4 do.
Ditto, second quality	1/8 do.
Underlining	1/8 do.
Sheathing	1/8 do.
Galvanized felting nails	2/- lb.

PRECAST CONCRETE LINTOLS—

1 : 2 : 4—½in material, finished with fair exposed faces, including all form-work, and one ½in diameter mild steel rod reinforcement to each 4½in in width.

Per foot lineal delivered to site

4½ × 6in	9in × 6in	9in × 9in	13½in × 9in	18in × 9in
4/-	6/-	7/8	9/6	11/6

STONE

PER FOOT CUBE in random blocks not exceeding 20ft cube in each, free on rail London.

Monks Park 8/- St. Aldhelm 9/-.

Portland brown Whitbed 8/3½

Other stone but delivered to sites. Doultling 8/9, Beer 8/3

TIMBER

Softwood—sawn—random lengths.

	Per Standard	Per cubic foot
Carcassing quality	£105	12/8
Joinery quality	£120 and up	13/4
Plain edged unsorted flooring, per square	½in 90/-	1in 110/-
	1½in 138/-	1½in 165/-

½in insulating wall board (600 yards) 4/4 yard super.

Larger quantities cost less, and smaller quantities more.

SUNDRIES—

	Dia.	3in	6in	9in
Black hexagon bolts, nuts and washers. Each ..	½in 7d	10d	1/-	1/6
Sashline, hemp, good quality ..	½in 11d	1/2	1/6	1/11
Per Yard Run	1/3	1/7	1/8	1/4
Floor brads	No. 6 9d	No. 8 1/1	No. 10 1/4	—
Cut Clasp Nails	—	68/-	per cwt	—
Steel ordinary screws 1" ..	No. 8 3/-	2" No. 8 5/2	per cwt	—
Brass, ditto	Do. 10/2	Do. 17/10	gross	—

HARDWOOD—

	Per ft	super	Per
Prime	½in	1in	ft cube
African mahogany	2/4	2/6	28/-
Honduras ditto	3/3	4/-	50/-
Portuguese Guinea ditto	3/1	3/3	36/-
African walnut	2/5	2/7	29/-
Australian ditto	5/6	5/10	65/-
English oak	4/3	4/6	50/-
Yugoslavian ditto	3/4	3/7	40/-
Burma and Siam Teak	5/-	5/9	65/-

DOORS.—STANDARD TYPE SOFTWOOD

Each in quantities 12 or more.

1½in finish, 4 horizontal panels moulded both sides 6ft 6in high.

2' 3" wide 41/-

2' 6" do. 42/3

2' 9" do. 44/6

FLUSH DOORS, 1½in thick, ply faced both sides, lipped edge.

All 6ft 6in high.

2' 3" wide 47/6

2' 6" do. 49/6

2' 9" do. 51/6

2' 12" do. 53/6

2' 15" do. 55/6

2' 18" do. 57/6

2' 21" do. 59/6

2' 24" do. 61/6

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2' 465" do. 355/6

2' 468" do. 357/6

2' 471" do. 359/6

A SERVICE EVERY ARCHITECT SHOULD KNOW ABOUT

A complete lighting scheme for any purpose and any premises worked out in collaboration with yourself — that is what Philips Lighting Design Service offers you, free of charge and without obligation.

Philips Lighting Design Service Staff includes a qualified architect who has made a special study of lighting and colour problems, and a highly skilled team of lighting engineers backed by the huge resources of the Philips organisation. The Building Exhibition at Olympia (November 16–30) would be an excellent place for you to learn more about this Free advisory service. We look forward to seeing you on the Philips Stand No. F.124.

If you are unable to visit us at the Building Exhibition, you have only to write or 'phone and we shall be glad to supply full details.



FOR IMAGINATIVE LIGHTING—TALK TO PHILIPS

PHILIPS ELECTRICAL LIMITED

LIGHTING DIV., CENTURY HOUSE, SHAFTESBURY AVE., LONDON, W.C.2. GERRARD 7777

your results will be just that
much better if you use -

CELOTEX
FIVE-STAR
HARDBOARD

Celotex Five-Star Hardboard can be cut, bevelled, nailed and shaped like wood with normal woodworking tools. But, unlike wood, it is ready for instant use and there is no waste, as it can be used right up to the very last piece! It is grainless which means that you are never troubled by knot-holes and it will not crack, split or splinter. Send today for samples and further details.

Ask for it by name

CELOTEX

FIVE-STAR

Made in Great Britain with all-British materials by
CELOTEX LIMITED, NORTH CIRCULAR ROAD
STONEBRIDGE PARK, LONDON, N.W.10



★
Exceptional strength

★
Large sized sheets for economy

★
Attractive, rich brown colour

★
Ideal for applied finishes

★
Easily, quickly handled and fixed

BUILDING EXHIBITION

We look forward to
welcoming you on
STAND 55 · ROW C · GRAND MALL
· OLYMPIA

HARDBOARD

Every sheet carries a FIVE-STAR label

TELEPHONE: ELGAR 5717 (10 lines)

CURRENT MARKET

IRONMONGERY—Continued

	12in	18in	24in	30in	36in
Tee hinges (japanned), per pair	2/-	3/10	—	—	—
Do. but stronger, per pair	3/4	6/1	8/3	—	—
Hook and Ride hinges, per pair	—	—	13/4	16/3	24/10
BOLTS—each—	3in	4in	6in	8in	10in 12in
Cabinet, barrel, straight or necked	1/4	1/7	2/1	—	—
Square spring, with brass knob	1/4	1/7	2/1	—	—
Tower bolts	—	1/7	2/3	3/-	3/9 4/6
Barrel bolts	—	2/7	3/9	4/10	6/3 7/7
Add to Tower or Barrel bolts if necked	—	1/4d	1/4d	1d	1d 1d
LOCKS—each—					
Rim lock, 2 lever, wrot case brass bolt and bushing	12/-	—	—	—	3/6 3/3
Mortice lock, 2 lever, bushed ..	12/-	—	—	—	3/3 8/9
Cylinder latches, japanned case	—	—	—	—	3/10 15/3
Brass sash fastener	—	—	—	—	each 4/-
Casement fasteners (malleable) ..	—	—	—	—	do. 1/6
Do. stays	—	—	—	—	do. 2/-
Axle pulleys (brass face, iron wheel)	—	—	—	—	do. 4/7
Do. as last, but with brass wheel, 1 1/2in.	—	—	—	—	do. 5/9
Sash line, No. 8 Anchor yellow label	—	—	—	—	per yard 1/-

METAL GOODS

British rolled steel joists ex mills to basis sections on site (6in x 5in, 8in x 5in or 6in, and 10in or 12in x 6in)	£34/0/0 per ton
Extra cost over basis for following sections— 9in or 18in x 7in, 14in x 5 1/2in, 15in x 5in, 14in or 15in or 16in or 18in x 6in, 20in x 6 1/2in, 20in x 7 1/2in, 10in or 12in or 14in or 18in x 8in	10/- per ton
5in x 4 1/2in, 7in x 3 1/2in, 13 x 5in	15/- do.
12in x 5in, 22in x 7in	20/- do.
6in x 4 1/2in, 7in or 8in or 9in x 4in, 10in x 5in	25/- do.
4in x 3in, 10in x 4 1/2in	30/- do.
5in x 2 1/2in, 5in x 3in	35/- do.
6in x 3in, 24in x 7 1/2in	40/- do.
3in x 3in	50/- do.
4 1/2in x 1 1/2in	65/- do.
3in x 1 1/2in, 4in x 1 1/2in	70/- do.
1/2 mild steel reinforcing rods ex mill d/d	£35 0/0 do.
Extras per ton	
1/2in and 1/2in diameter in size	32/- per ton
1/2in do. do.	32/- do.
1/2in do. do.	49/6 do.
1/2in do. do.	67/- do.
1/2in do. do.	87/- do.
1/2in do. do.	124/6 do.
Extras for length	
5ft to 3ft	7/6 do.
3ft to 2ft	15/- do.
2ft	22/6 do.
40ft to 45ft	15/- do.
45ft to 50ft	22/5 do.
Bolts and Nuts	90/- per cwt
Trench covering, including trays 1 1/2in deep and rebated frames, 9in wide	20/6 foot run
Do., but 12in wide	22/- do.
Do., but 14in wide	24/- do.
Do., but 18in wide	31/6 do.

METAL SUNDRIES

Cast iron pavement light filled with 4in x 3in glass lenses	32/-	per ft super
1in wrought iron plate door in four panels with stiles and rails on both sides	50/-	do.
20 gauge galvanized iron trunking and straps	5/6	do.
24 gauge galvanized Tallboy 6ft high 9in diameter with 9in x 12in base	57/6	each

CHAIN LINK FENCING—

In 25 yards lineal rolls inclusive of line wire, 2in mesh		Height in inches—	60	72
10 1/2 wire gauge	98/-	114/3	130/9	163/1 195/9
12 1/2 do.	69/-	80/6	92/-	114/9 137/9
14 1/2 do.	49/3	57/6	65/9	82/- 98/6

PRICES (Continued)

DOUBLE SOOT DOORS AND FRAMES—

Fitted with brass turnbuckle 9in x 9in 12in x 9in 14in x 12in and cast key	19/-	28/-	48/6
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SLIDING DOORS, GATES AND PARTITIONS—

Factory sliding doors in two leaves contain- ing about 100 square feet with mild steel angle frames covered with 24 gauge corrugated galvanized sheeting and in- cluding hanging tubular track and gear complete	15/6	foot super
Factory entrance gates with mild steel frames clad with 2in mesh chain link complete ..	12/-	do.
Steel partitioning, glazed (rough cast) and stove enamelled	18/6	do.

STEEL ROOF LIGHTS—

Lanterns with vertical sides, and hipped roof, glazed with 1/2in cast glass and lead flashed	14/-	foot super
Skylights of similar construction (27ft super)	20/-	do.

HIGH GRADE DOMESTIC BOILERS

Coke Fed. Performance 20 to 40 gallons raised from 40°F to 140°F per hour as under.	
--	--

TYPE		£	s	d
20 gallons per hour 15in wide, 23in high	Plain cast iron black finish	9	0	0
	Ditto, in cream mottle finish including side jackets	13	0	0
25 gallons per hour 19in wide, 22in high	In cast iron as before and base plate	11	10	0
	Ditto in cream mottle with side jackets and base ..	16	17	0
40 gallons per hour 22in wide, 23in high	In cast iron, etc., as last ditto	18	5	0
	Ditto in cream mottle all as last ditto	24	13	0

GAS, WATER AND STEAM TUBES

(From Standard List)

Internal Diameter—	1/2in	3/4in	1in	1 1/4in	1 1/2in	2in
Tubes per ft	4d	4 1/2d	5 1/2d	6 1/2d	9 1/2d	1 1/4 1 1/2
Bends each	8d	9d	11d	1 1/2	1 7/8	2 1/4 2 1/2
Elbows, sq. do.	10d	11d	1 1/4	1 1/2	1 3/4	2 1/4 2 1/2
Do., round do.	11d	1 1/4	1 1/2	1 3/4	1 7/8	2 1/4 2 1/2
Tees .. do.	1 1/4	1 1/2	1 3/4	1 7/8	1 10/16	2 1/4 2 1/2
Crosses .. do.	2 1/2	2 3/4	3 1/4	3 1/2	4 1/4	5 1/4 5 1/2
Backnuts .. do.	2d	2d	3d	3 1/2d	5d	6d 8d 1 1/4
Sockets .. do.	3d	3d	4d	5d	6d	8d 10 1/2d 1 1/4
Sockets, dimin. .. do.	4d	5d	6d	7d	9d	1 1/4 1 1/2 2/-

PERCENTAGES ON OR OFF ABOVE

In quantity and in random lengths.

TUBE—

Class A (light)	-10 1/4%	Black	+9 1/4%	Galvanized
Class B (medium)	-1 1/2%	Do.	+19 1/4%	Do.
Class C (heavy)	+12%	Do.	+37 1/4%	Do.

FITTINGS—

Lightweight	+23%	Black	+37 1/4%	Galvanized
Heavy	+31%	Black	+47 1/4%	Do.

RAINWATER GOODS (Painted or Unpainted)

In consignments of 5 cwt. and over.

From Standard List.

Pipe:	2in	3in	4in	5in	6in
6ft. lengths	each 12/10	14/5	18/11	24/8	31/6
3ft do.	do. 7/-	7/9	10/-	13/1	16/6
Shoe, ordinary	do. 2/7	3/10	5/7	9/5	12/11
Bend	do. 3/1	4/4	6/3	11/3	14/7
Branch, single	do. 4/6	6/7	9/3	14/7	22/6
Offset, 4 1/2in	do. 3/9	5/3	7/9	12/11	17/-
Do. 9in	do. 4/11	6/6	9/8	15/3	19/3
H.R. gutter, 6ft length	do. —	6/-	8/5	10/4	13/10
Angle or nozzle	do. —	2/6	3/1	3/9	5/4
Stop end	do. —	9d	1/1	1/6	1/9
					Above plus 7 1/4%

CURRENT MARKET PRICES (Continued)

PLASTERING MATERIALS

Sand, lime, cement and various plasters are previously included under those heads—

Metal lathing (1" x 24G) (20 yards)	3/8 1/2 sq. yard
Plaster baseboard 1" (300 to 599 yards)	2/6 do.
Lath nails, galvanized	1/2 lb.
White glazed tiles (6" x 6" x 1/2")	18/6 sq. yard
Do. rounded on one edge	22/6 do.
Do. on two adjoining edges	27/- do.

PLUMBER'S GOODS

4 lb. lead sheet (in 1-ton lots)	143/3 per cwt
Lead water pipe in coils (do.)	144/6 do.
Plumber's solder	3/7 lb.
Copper tacks	6/9 do.

IRON SOIL AND WASTE PIPE. (5cwt lots and up)

each	2in	3in	3 1/2in	4in
1/2 in Medium pipe, 6 ft length	14/6	17/2	19/3	21/11
Ditto, 4ft length	10/5	12/2	13/7	15/5
Bends	5/4	6/6	8/1	9/1
Ditto, with oval door	17/4	18/6	21/1	24/7
Junction, single	6/6	9/8	11/3	13/3
Ditto, with oval door	18/6	21/8	24/3	26/3
Swan necks, 4 1/2 in	6/6	10/3	11/9	13/9
Ditto, 9in	8/8	11/9	13/9	16/1
Holderbat, 2 1/2 in projection	4/11	5/1	5/4	5/6

Above plus 7 1/2%

GALVANIZED CISTERNS, TANKS AND CYLINDERS—

(Less than four)

each	gallons
CISTERNS—	
Bends over tops and corner plates. Riveted or welded	Nominal capacity

14 gauge	100	150	200	300
12 gauge	180/-	243/-	296/-	424/-
1 1/2 in. plate	208/-	277/-	328/-	456/-
	246/-	310/-	372/-	522/-

HOT WATER TANKS

Riveted and with handhole and ring.	20	25	30	40
12 gauge	124/-	137/-	150/-	180/-
1 1/2 in. plate	137/3	151/-	163/-	199/3

HOT WATER CYLINDERS—

Riveted, with handhole and ring.	20	25	33	39
12 gauge	160/-	176/-	189/-	204/6
1 1/2 in plate	177/-	195/6	214/-	226/6

PLUMBER'S BRASSWORK, etc.

Each

	1 1/2 in	2 in	3 in	4 in
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Boiler screws, single nut	1/7	2/1	3/5	5/1
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Ditto, double nut	2/2	2/10	4/8	6/10
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Cap and lining	1/2	1/7	2/-	2/3
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Plumber's unions	2/7	3/2	4/6	8/-
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Ball valves, screwed iron	16/-	23/-	—	—
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Ditto, fly nut and union	17/-	24/6	—	—
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Bib valves, crutch top	10/-	14/3	—	—
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Ditto, but screwed boss	11/2	16/-	—	—
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Stop valves, screwed iron	8/-	12/3	—	—
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Ditto, screwed iron and union	10/3	15/6	25/9	—
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Ditto, double union	11/-	16/3	27/6	—
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Waste, plug chain and stay	1 1/2 in	1 1/2 in	2 in	4 in
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Caps and screws	3/1	3/10	5/6	—
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Sleeves, long	—	—	7/5	12/6
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Ditto, short	—	3/8	4/3	10/6
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Thimble	—	3/9	4/9	10/3
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Full way gate valves, hot pressed	21/6	30/-	—	—
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Lead 7 lb P. trap	1 1/2 in	1 1/2 in	2 in	2 in
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Ditto, S. trap	6/11	9/1	12/10	—
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Lead 6 lb P. traps with 3 in seal	8/7	11/3	15/9	—
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Ditto, but S. traps, ditto	7/9	9/4	—	—
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Wire balloon guards, copper, 2in 3/-; 4in 3/3.	9/7	11/9	—	—
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Ditto, galvanized iron, 2in 1/10; 4in 2/-.	—	—	—	—
--	---	---	---	---

Hair felt, 34in x 20in, 24 oz, 6/- sheet.	—	—	—	—
---	---	---	---	---

Boss white jointing compound, 2/- lb.	—	—	—	—
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Gaskin, 1/5 1/2 lb. Hemp, 7/3 lb.	—	—	—	—
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COPPER TUBES—Extract from B.S. 659/1944—

Nominal bore	Internal work (semi-hard). Outside diameter inch	Gauge	Weight lb per ft	3 cwt. lots Price per lb pence	Price per ft. pence
1/2 in	0.596	19	0.27	54 1/2	14.79
3/4 in	0.846	19	0.39	53 1/2	20.72
1 in	1.112	18	0.62	51 1/2	32.01
1 1/4 in	1.362	18	0.76	51	38.76
1 1/2 in	1.612	18	0.91	51	46.41
2 in	2.128	17	1.40	52 1/2	73.68

CAPILLARY TYPE CONNECTIONS—

Each	1/2 in	3/4 in	1 in	1 1/4 in	1 1/2 in	2 in
Straight	1/9	2/5 1/2	3/10 1/2	5/4	6/10	9/10
Bends	4/7	5/7 1/2	8/1	11/0 1/2	17/4	24/4
Tees	4/2 1/2	4/11	7/10 1/2	11/7	16/5 1/2	24/4
Brackets (Brass)	1/11	2/1 1/2	2/5 1/2	—	—	—

GLASS

English, flat drawn sheet glass cut to sizes in squares	24oz	26oz	32oz
	7 1/2 d.	10 d.	1/1
Figured rolled and cathedral, white, cut to sizes, in squares (1/2 in)	9d	Per foot super	
Ditto, but in standard tints	1/4 1/2	do.	
1/2 in Rolled, cut to size, in squares	9d	do.	
1/2 in or 3/4 in rough cast ditto	1/-	do.	
1/2 in ditto wired ditto	1/2	do.	
Georgian wired ditto	1/2 1/2	do.	
Fluted (No. 4) ditto	1/3	do.	
Reeded (narrow, broad, cross and major) ditto	1/1	do.	
Reedylite (narrow and broad) ditto	1/1	do.	
Spotlyte ditto	1/1	do.	
1/2 in. Calorex Cast ditto	1/2 1/2	do.	
Calorex Sheet (15oz.)	6/6	do.	
ditto (21 oz.)	9/-	do.	
Flashed Opal (15/18oz.)	3/10	do.	
Pot Opal (15/18oz.)	3/9	do.	

POLISHED PLATE GLASS (Tariff) Cut to sizes.

Ordinary substance 1/2 in and 1 in thick.
Per Superficial foot.

In plates not exceeding:	General Glazing
2ft super in each	3/7
5ft ditto	4/5
45ft ditto (unless extra sizes)	5/1
100ft ditto (ditto)	5/6

Extra sizes, i.e., Plates exceeding 100ft super or 96in high or 160in one way or 96in both ways at higher prices.

DECORATING MATERIAL

	Price	Unit
Aluminium Paint	37/6	Gallon
Distemper, ceiling	35/-	Cwt
Distemper, washable	120/-	do.
Enamel	60/-	Gallon
Gold Metallic Paint	86/6	do.
Heat Resisting Paint	50/-	do.
Japan, black	23/6	do.
Knotting	40/-	do.
Linseed Oil	14/9	do.
Boiled, ditto	15/3	do.
Proprietary Paints (good class)—		
Finishing	47/-	do.
Priming	50/-	do.
Undercoat	53/-	do.
Paperhanger's Paste	34/6	Cwt
Petrifying liquid	8/9	Gallon
Putty	51/-	Cwt
Size	9/3	Firkin
Terebinte	16/-	Gallon
Turpentine substitute	6/3	do.
Varnish, oak, copal inside use	33/-	do.
Ditto, ditto, outside use	38/-	do.
Ditto, white, eggshell, flat	44/6	do.
White lead mixed paint	62/-	do.
White lead	178/-	Cwt
Whiting	12/6	do.



"VITROLITE" gleams with matchless beauty—as permanent as it is hygienic. Because they are fired into the glass, and not just applied to it, the colours never fail or wear off, and the smooth, fire-finished surface never crazes or loses its bright sheen. "Vitrolite" has many uses, and wherever it is used it brings beauty—to stay.

The colours are

GREEN, GREEN AGATE, PRIMROSE, TURQUOISE, EGGSHELL, CREAM, PEARL GREY AND IVORY, AS WELL AS BLACK AND WHITE.

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wall tiles

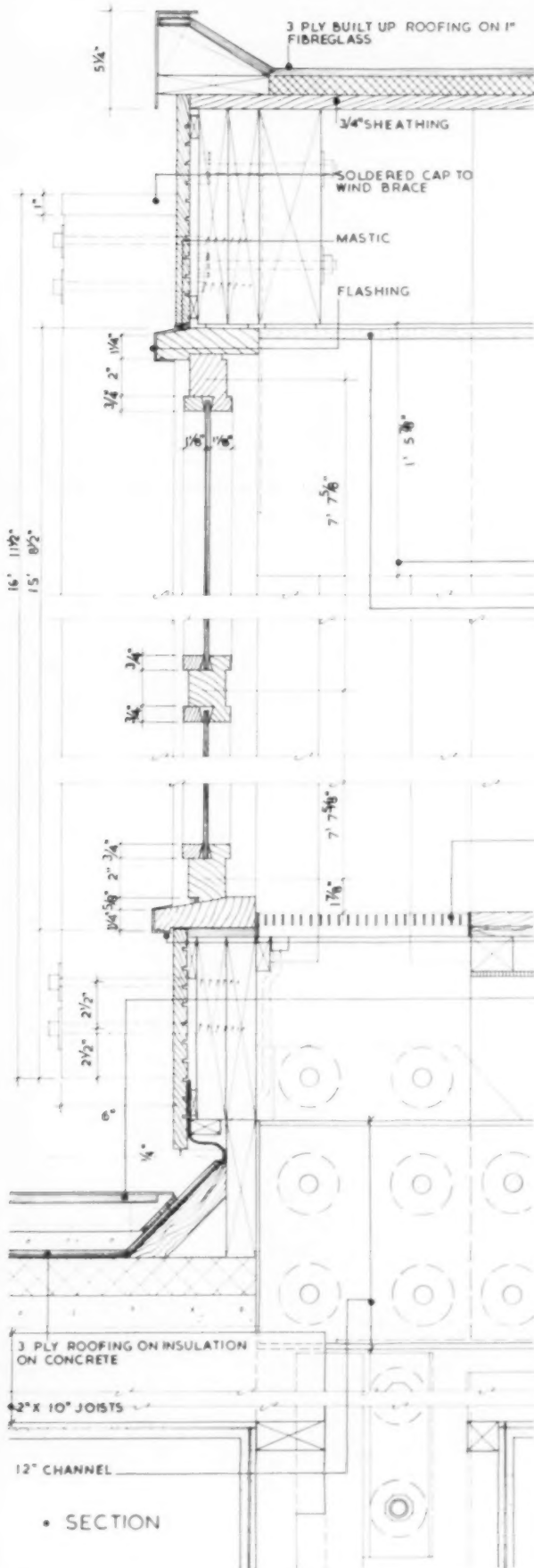
Thermoplastic and flexible. Easily fixed with adhesive. Standard size: $4\frac{1}{2}" \times 4\frac{1}{2}" \times \frac{1}{16}"$.

In a range of pastel shades with decorative strips and angles in stronger colours.

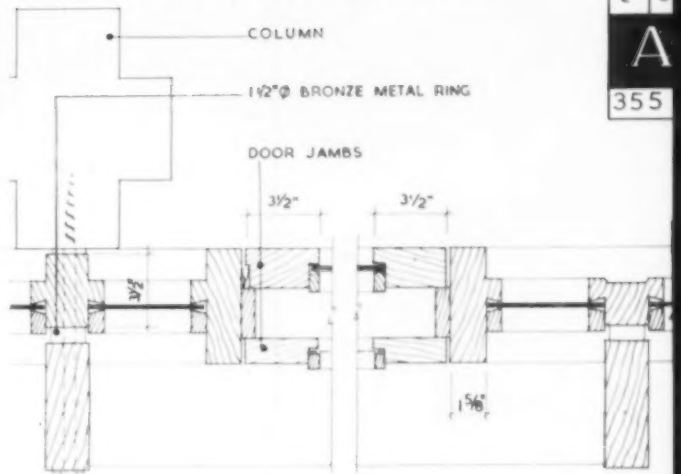
Ask our representative to call and show you samples:

The Marley Tile Company Ltd., London Road, Riverhead, Sevenoaks, Kent. Sevenoaks 2251

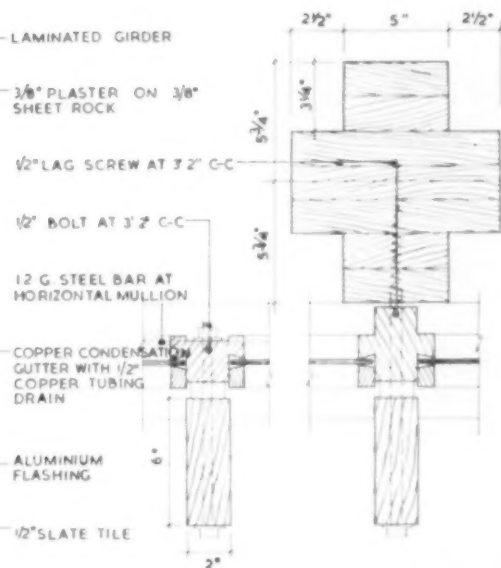




• SECTION

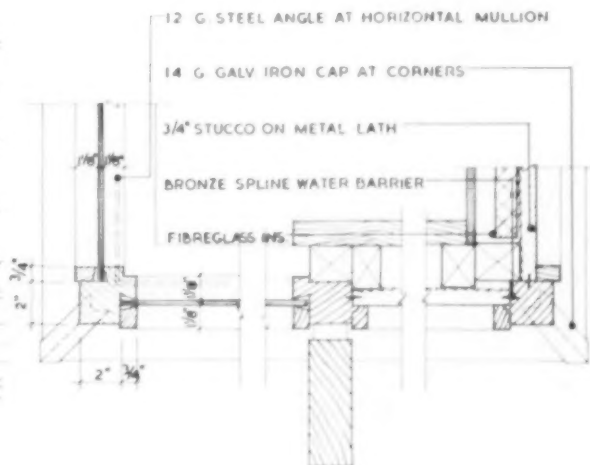


• DOOR JAMB DETAILS



• WIND BRACE

• LAMINATED COLUMN



• DETAIL AT CORNERS

SCALE OF DRAWING • 1/12\"/>



WALL DETAIL: HOUSE AT NEW CANAAN, CONNECTICUT
ARCHITECT: PHILIP C. JOHNSON

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the

CONTRACT • NEWS •

OPEN

BUILDING

BATH C.C. (a) Erection of 7 shops with maisonnettes over, and 6 flats all comprising one building, with ancillary works, at Weston High Street. (b) F. W. Beresford Smith, 2 Princes Buildings. (c) 2gns. (d) November 1. (e) December 14.

BENTLEY-WITH-ARKSEY U.C. (a) Erection of a public convenience, construction of a park entrance and incidental work. (b) Council's Engineer, Council Offices. (c) 1gn. (e) November 14.

BERKSHIRE and READING FIRE AUTHORITY. (a) Erection of a new fire station at Crowthorne. (b) County Architect, Wilton House, Parkside Road, Reading. (c) 2gns. (e) November 16.

BEXHILL B.C. (a) Contract No. 18: Erection of 8 bungalows of normal construction, together with fencing and drainage works at Southlands Road. (b) Borough Engineer, Town Hall. (c) 2gns. (e) November 11.

BEXHILL B.C. (a) Contract No. 19: Erection of 12 houses of normal construction, together with fencing and drainage works at Southlands Road. (b) Borough Engineer, Town Hall. (c) 2gns. (e) November 11.

CHESHIRE C.C. (a) Are preparing lists of contractors and suppliers from whom tenders may be invited as required for: (1) building construction or adaptation up to £20,000, (2) building construction of adaptation over £20,000, (3) precast concrete floors and roofs, (4) structural steelwork, (5) heating and h.w. installations, (6) electrical installations, (7) sanitary goods, (8) metal windows, (9) ironmongery. (b) County Architect, The Castle, Chester. (d) December 1.

CHICHESTER C.C. (a) Erection of a new house for the Superintendent at Chichester Cemetery. (b) E. Brian Tyler, Prior House, Westgate. (c) 1gn. (d) October 31.

COVENTRY CORPORATION. (a) Erection of 6 unit factories at Fletchamstead Highway, having floor area of approx. 10,000 sq ft together with site-works and outbuildings. (b) City Architect, Bull Yard. (c) 2gns. (d) November 21. (e) December 19.

DUNMOW R.C. (a) Erection of one pair of houses at Broadfield, High Rodding, and one pair of houses at Styles, Little Bardfield. (b) Council's Clerk, Council Offices. (c) 3gns. (e) November 21.

EAST DEREHAM U.C. (a) Erection of (Block A) 12 dwellings, (Block B) 8 dwellings, and (Block C) 6 dwellings, together with external services at Southgreen site (b) Harold Marsh, 4a, Market Place. (c) 2gns. (e) November 8.

address it is the same as the locality given in the heading, (c) deposit, (d) last date of application. (e) last date and time for submission of tenders. Full details of contracts marked * are given in the advertisement section.

FIBRE INSULATION BOARD

"QUITFIRE" impregnated is **FIREPROOFED** (Class 1 to B.S.476/32 Amdt No. 2) and **FUNGUS**-proofed or **TERMITE**-proofed (or all three combined.)

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EAST SUSSEX C.C. (a) Erection of proposed Chailey Secondary School. (b) County Architect, County Hall, Lewes. (d) October 31.

EIRE—CAVAN C.C. (a) Erection of a fire station at Ballieborough. (b) County Secretary, Courthouse. (c) 5gns. (e) November 7.

EIRE—SLIGO. (a) Erection of the new church under the patronage of St. Anne, at Garavogue. (b) Leonard and Williams, 32, Nassau Street, Dublin. (c) £50. (e) November 8.

ELLESMERE PORT B.C. (a) Contract No. 183: Erection of 196 houses and one special type house, in blocks of two, four, six and eight, on North Whitby estate, parts 111 and 111A. (b) Borough Engineer, Queen Street. (c) 3gns. (e) November 28.

EPHING U.C. (a) Erection of traditional or non-traditional workshops and messrooms, asbestos garages, laying of reinforced concrete yard, installation of petrol tank and pump on a site off High Street. (b) Council's Clerk, Council Offices, 91, High Street. (c) 2gns. (e) November 8.

ESSEX C.C. (a) Erection of a fire station at Frinton-on-Sea. Approx. cost, £8,250. (b) County Architect, County Hall, Chelmsford. (d) October 29.

ESSEX C.C. (a) Erection of sub-branch library at Harold Wood, Hornchurch. Approx. cost £20,000. (b) County Architect, County Hall, Chelmsford. (d) October 29.

ESSEX C.C. (a) Erection of Rochford Hawkwell Holt junior school. Approx. cost £49,000. (b) County Architect, County Hall, Chelmsford. (d) October 29.

ESSEX C.C. (a) Erection of hatted classroom block at Wickford Secondary School. Approx. cost £7,500. (b) County Architect, County Hall, Chelmsford. (d) November 5.

EVESHAM B.C. (a) Carrying out alterations to ladies' public conveniences, involving demolition of old buildings and the construction of new conveniences within the Town Hall building. (b) Borough Surveyor, 1, Leicester Gables, High Street. (c) 2gns. (e) November 7.

HAMPSHIRE POLICE AUTHORITY. (a) Erection of a police house with attached office, at Headley, Kingsclere. (b) County Architect, The Castle, Winchester. (c) 1gn. (d) November 3.

HATFIELD R.C. (a) Erection of 30 houses and 10 garages on the Redhall estate (north). (b) J. H. Parker, 82, Great North Road. (c) 2gns. (e) November 15.

HATFIELD R.C. (a) Erection of 10 garages in Lemsford Road, 10 in Branch Close, 7 in Talbot Road, 7 at Little Heath, 6 in Dellsome Lane, Welham Green. (b) J. H. Parker, 82, Great North Road. (e) November 15.

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HERNE BAY U.C. (a) Erection of 6 pairs of houses in Fitzgerald Avenue. (b) Council's Engineer, Council Offices. (c) November 9.

HUNTINGDON C.C. (a) Erection of part second instalment, comprising kitchen and four classrooms with stores, etc., at Ramsey Secondary School, Hollow Lane, Ramsey. (b) County Architect, County Buildings. (c) 2gns. (e) November 15.

HUYTON-WITH-ROBY U.C. (a) Erection of a public convenience at Rydal Park. (b) Council's Architect, Council Offices, Derby Road. (c) 2gns. (e) November 11.

IPSWICH B.C. (a) Erection of 118 houses in pairs and blocks of four, on Chantry estate 2B. (b) Borough Engineer, 19, Tower Street. (c) 3gns, by cheque. (d) November 3. (e) December 8.

KENDAL B.C. (a) Erection of 68 houses on Hall Garth estate. (b) Borough Engineer, Municipal Offices, Lowther Street. (c) 2gns. (e) November 23.

LANCASHIRE C.C. (a) Carrying out proposed alterations at Waterloo Occupation Centre, 9, Crosby Road South. (b) County Architect, P.O. Box No. 26, County Hall, Preston. (c) 2gns. (d) October 31, quoting reference A/MG.

LANCASHIRE C.C. (a) Erection of (1) proposed new classrooms at Broughton Tower Special School, Broughton-in-Furness, (2) new school in prefabricated timber hutting with traditional classrooms, lavatory block, and heating chamber block at Middleton Hollins 2 F.E. junior and infants' primary school, (3) new school in prefabricated timber hutting with traditional classrooms, lavatory block, and heating chamber block at Kirby Westvale No. 1 3 F.E. junior and infants' primary school. (b) County Architect, P.O. Box No. 26, County Hall, Preston. (d) October 31, quoting reference A/MG.

MONMOUTHSHIRE C.C. (a) The Council are preparing three lists of approved contractors for building projects and construction and improvements of roads and bridges. (1) For works estimated to cost more than £50,000; (2) for works estimated to cost between £15,000-£50,000; and (3) for works estimated to cost between £1,500-£15,000. (b) Council's Clerk, County Hall, Newport. (d) October 31, specifying the particular list or lists on which the contractor wishes to be placed.

MORLEY B.C. (a) Erection of (Contract No. 1) 10 bungalows at Low Moor estate, and (Contract No. 2) 66 houses at Low Moor estate. (b) Borough Engineer, Town Hall. (c) 2gns, by cheque. (e) November 14.

N. IRELAND—ANTRIM EDUCATION COMMITTEE. (a) Carrying out alterations and additions to Leslagan primary school, Ballymoney. (b) Director of Education, Education Offices, 475/477, Antrim Road, Belfast. (e) November 11.

N. IRELAND—DOWN E.C. (a) Erection of new intermediate school at Knockbrea Road, Belfast. (b) Messrs. W. H. Stephens and Sons, 13, Donegall Square North, Belfast. (c) 5gns. (e) November 10.

PETERLEE DEVELOPMENT CORPORATION. (a) Erection of a block of four shops at Beverley Way, Acre Rigg. (b) General Manager, Peterlee Development Corporation, Shotton Hall, Castle Eden, Co. Durham. (c) 2gns. (e) November 19.

SCOTLAND—FIFE MENTAL HOSPITALS BOARD. (a) Erection of head dairyman's cottage at Springfield Farm, Cupar. (b) Messrs. Mills and Shepherd, 69, Crossgate, Cupar. (e) November 15.

SCOTLAND—INVERNESS C.C. (a) Erection of 22 houses at Beauty (Priory site) 24 houses at Kiltarlity, 10 houses at Croy, and 4 houses at Tornagrain. (b) James Shankley, 2, Ness Walk. (d) November 5.

SOUTHPORT B.C. (a) Erection of 97 dwellings on the Burnley Road estate, Ainsdale. (b) Borough Architect, 99-105, Lord Street. (c) 2gns. (e) November 18.

SOUTH SHIELDS B.C. (a) Erection of 62 houses on Simonside estate. (b) Borough Engineer, Town Hall. (c) 2gns. (e) November 8.

SOUTHWELL R.C. (a) Erection of (1) 16 dwellings at Ollerton (Alder Grove), (2) 16 dwellings at Edwinstowe (Abbey Road) and (3) road works, etc., at Edwinstowe. (b) Messrs. Wm. Saunders and Partners, 24, Castlegate, Newark-on-Trent, Notts. (c) 2gns. (e) November 7.

TAUNTON B.C. (a) Erection of a brick-built pavilion at Taunton Green. (b) Borough Engineer, St. Paul's House. (e) December 2.

THORNBURY R.C. (a) Erection of public conveniences at The Hill, Almondsbury. (b) Council's Surveyor, Council Offices, Castle Street. (c) 2gns. (d) November 4. (e) November 25.

TYLDESLEY U.C. (a) Erection of a park shelter at the Bullcroft, Astley. (b) Council's Engineer, Town Hall. (c) 1gn. (e) November 11.

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WIDNES B.C. (a) Erection of cloak-rooms and lavatories, involving alterations and additions to the College of Further Education, Victoria Square. (b) Borough Architect, Brendon House, Widnes Road. (c) 2gns, by cheque, payable to Corporation. (e) November 7.

WIGAN R.C. (a) Erection of 24 houses and flats, together with ancillary site works at Mossy Lea Road, Wrightington. (b) J. Holding, 10, Bridgeman Terrace. (c) 2gns. (e) November 7.

WORTLEY R.C. (a) Erection of 72 traditional houses at St. Michael's Crescent, Ecclesfield. (b) Arthur Wikeley, Council Offices, Grenoside, Sheffield. (c) £3. (e) November 14.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

COVENTRY CORPORATION. (1) Second instalment of Coventry Training College. (3) W. H. Jones and Son Ltd., Lockhurst Lane, Coventry. (4) £284,911. (1) 140 dwellings. (2) Wood End. (3) Geo. Wimpey and Co. Ltd. (4) £190,648.

HENDON B.C. (1) Six blocks containing 352 dwellings. (2) Spur Road, Edgeware. (3) Geo. Wimpey and Co. Ltd., Hammersmith Grove, London, W.6. (4) £784,726.

HULL CORPORATION. (1) Super-structure of Central Police Station. (3) Quibell and Son Ltd., 354, Beverley Road, Hull. (4) £241,204.

LEEDS CITY COUNCIL. (1) 168 dwellings. (2) Moortown. (3) Direct labour. (4) £180,554. (1) 66 dwellings. (2) Moortown. (3) Spooners (Hull) Ltd., Stoneferry, Hull. (4) £86,552. (1) 68 dwellings. (2) Seacroft. (3) Henry Boot and Sons (Reema) Ltd., Eccleshall Road South, Sheffield. (4) £82,819.

LONDON. (1) Public-house, for Courage and Co. Ltd. (2) Peckham Rye, S.E. (3) Holliday and Greenwood Ltd., 11, Buckingham Palace Gardens, London, S.W.1. (4) £47,000.

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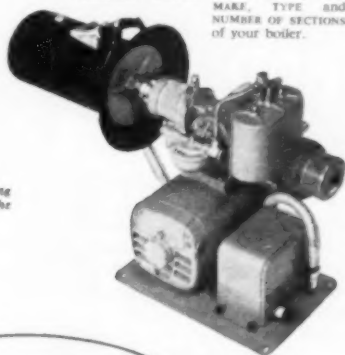
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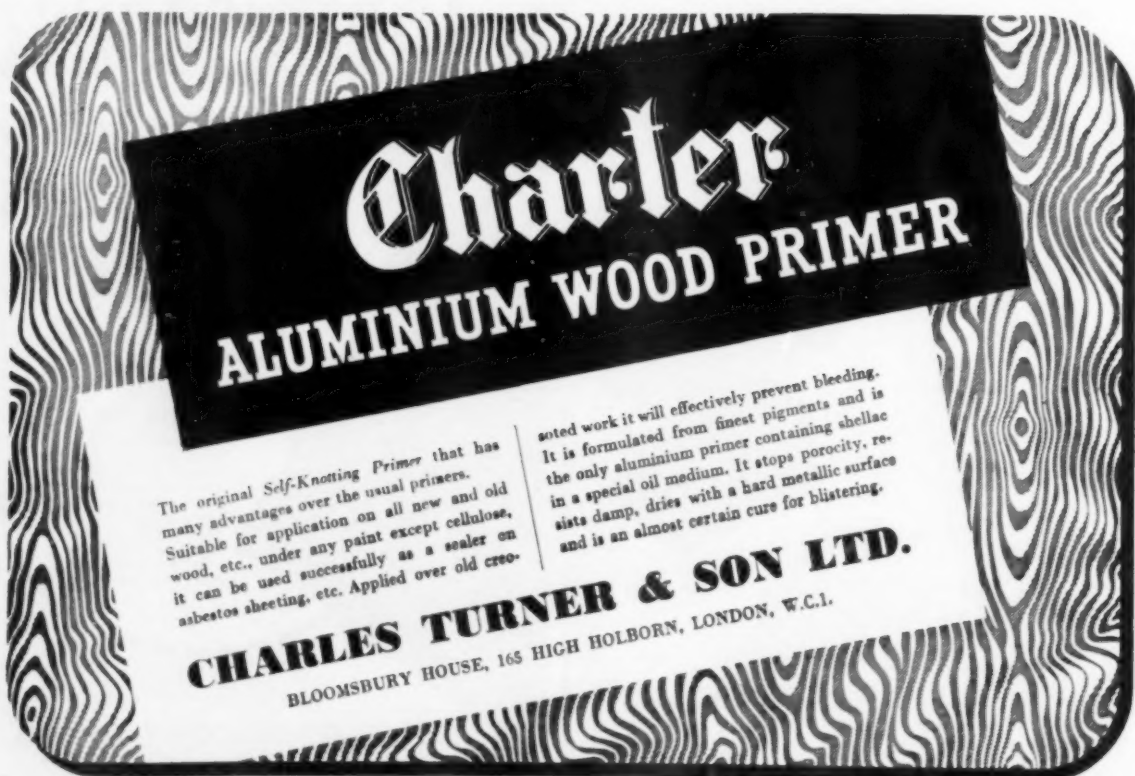
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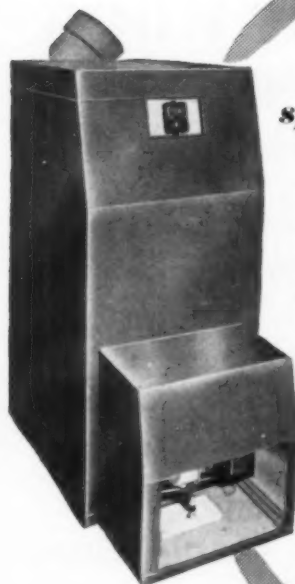
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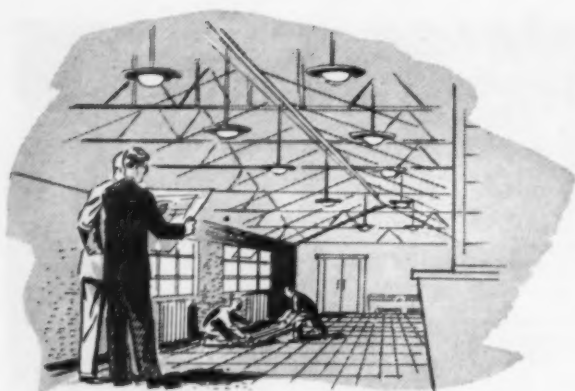
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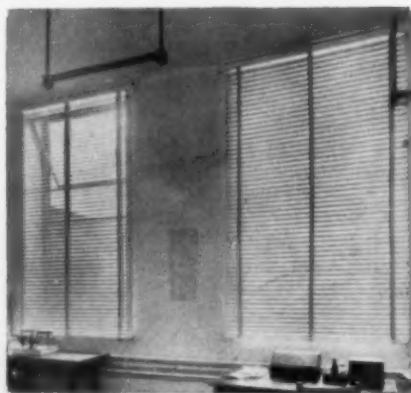
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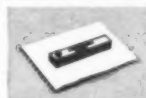
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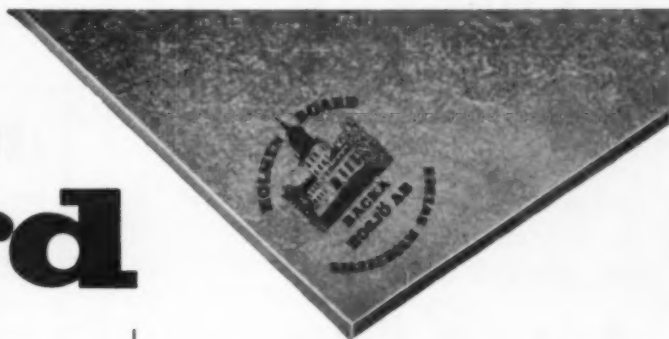
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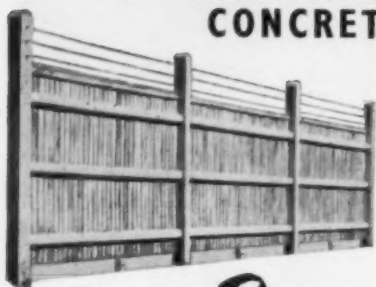
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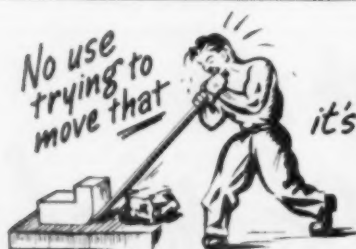
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Further particulars and application forms may be obtained from

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Telephone: WELbeck 9966.



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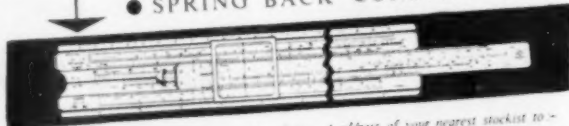
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APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is exempted from the provisions of The Modification of Vacancies Order, 1952.

STATES OF GUERNSEY

PUBLIC WORKS DEPARTMENT

APPLICATIONS are invited for the permanent and pensionable post of Architectural Assistant at a salary of £754 per annum rising by four annual increments to £836.

Applicants must be Associate members of the Royal Institute of British Architects and capable of preparing working and detailed drawings and specifications and supervising work.

Particulars of pension arrangements are obtainable on application.

Applications, stating age, qualifications, experience, present and previous appointments and salary, together with copies of two recent testimonials, should be delivered to the States Supervisor, States Office, Guernsey, Channel Islands, not later than Monday, November 7th, 1955. [1662]

HAMPSHIRE

APPLICATIONS are invited for the following appointments in the County Architect's Department:—

- (a) Assistant Architects, Grade IV (£675-£825)
- (b) Architectural Assistants, Grade II (£590-£640)
- (c) Architectural Assistant, Grade I (£500-£580).

Candidates for appointments:—
(a) Must be Registered Architects, preferably A.R.I.B.A., with good general experience in the design and construction of Public Buildings. The appointments will be terminable by three calendar months' notice on either side.
(b) should have passed the Intermediate Examination of the R.I.B.A. or its equivalent at one of the recognised Schools of Architecture and have had suitable office experience.
(c) should be studying for the Intermediate Examination of the R.I.B.A. and have had several years' experience in an Architect's office.

The appointments are pensionable and subject to satisfactory medical reports. In approved cases the County Council are prepared to assist in meeting removal and other expenses.

Applications, on forms obtainable from the County Architect, The Castle, Winchester, should reach him by the 12th November. [1681]

COUNTY BOROUGH OF DERBY

BOROUGH ARCHITECT'S DEPARTMENT

HEATING, VENTILATING AND MECHANICAL ENGINEER, A.P.T. Grades V/VI. £750-£1,000 per annum.

APPLICANTS must be experienced in design of heating, ventilating and hot and cold water services, preparation of estimates and drawings for large public buildings and schools, and should be Associate Member of the Institution of Heating and Ventilating Engineers.

Commencing salary will be according to qualifications and experience.

Permanent superannuable appointment, subject to one month's notice and to medical examination. National Conditions of Service.

Any application form obtainable from and to be returned to the Borough Architect, The Council House, Corporation Street, Derby, not later than Monday, 14th November, 1955.

G. H. EMLYN JONES,
Town Clerk. [1682]

19th October, 1955.

COUNTY BOROUGH OF EAST HAM.

CHIEF QUANTITY SURVEYOR—
Grade V £750-£900

ARCHITECTURAL ASSISTANT
Grade II £560-£640

London Weighting is paid in addition. Salary in excess of the minima may be paid according to qualifications and experience.

Subsistence allowances may be granted over a reasonable period to the persons appointed if unable to obtain suitable housing accommodation, necessitating the maintenance of two homes.

Further details and application forms returnable by 11th November, 1955, from the Town Clerk, Town Hall, East Ham, E.6. [1683]

APPOINTMENTS—contd.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

CITY ARCHITECT'S DEPARTMENT.

The City Architect will be pleased to receive applications from suitably qualified persons for the following ARCHITECTURAL vacancies in the Normal Housing and/or Re-Housing Sections of his Department:—

- (a) PRINCIPAL ASSISTANT ARCHITECT A.P.T. Division Grade VI (£825-£1,000) (Normal Housing)
- (b) SENIOR ASSISTANT ARCHITECT A.P.T. Division Grade V (£750-£900) Normal Housing or Re-housing.
- (c) SENIOR ASSISTANT ARCHITECT. A.P.T. Division Grade IV (£675-£825) Normal Housing or Re-housing.
- (d) ASSISTANT ARCHITECT. A.P.T. Division Grade III (£600-£725) (Normal Housing).

The work of the Re-housing Section involves special responsibilities in regard to an extensive programme of Sump Clearance and Redevelopment by means of point blocks and other flat types.

The appointments will be subject to the provisions of the Local Government Superannuation Acts, 1937-1953, and to one month's notice on either side. Successful candidates will be required to pass a medical examination.

Applications, stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials or the names and addresses of two persons to whom reference may be made, should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.L., City Architect, 18, Cloth Market, Newcastle-upon-Tyne, 1, not later than Saturday, the 12th November, 1955.

JOHN ATKINSON,
Town Clerk.

Town Hall, Newcastle-upon-Tyne, 1.
29th October, 1955. [1684]

GOVERNMENT OF BECHUANALAND

ASSISTANT ARCHITECTS

DUTIES include the preparation of preliminary, working and details drawings and specifications for all work on proposed building programmes.

Appointments are on contract for 3 years on a fixed salary of £1,100 per annum, plus cost of living allowance, 12% of salary for married officers; 6% for single officers. Rehabilitation grant of £37 10s. for each 3 month resident service is also payable on satisfactory completion of contract. An allowance for education outside the High Commission Territories of £50 per annum for each child, with a maximum of £120 per annum.

Furnished quarters provided at a rental of 10% of salary. Free return passages for officer and his wife, and assistance towards children's passages. Leave is granted at the rate of 4 days for each completed month of resident service.

Candidates should be Associates of the Royal Institute of British Architects. Age limit 45.

Apply in writing to the Director of Recruitment, Colonial Office, Great Smith Street, London, S.W.1., giving briefly age, qualifications and experience and quoting reference No. BCD 112/76.08. [1674]

BOROUGH OF MITCHAM

APPOINTMENT OF ARCHITECTURAL ASSISTANT

APPLICATIONS are invited for the above appointment in the Borough Engineer and Surveyor's Department to A.P.T. Grade II of the National Scale of Salaries (£560 x 4/£20 to £640 per annum) plus London "weighting".

Further particulars may be obtained from the Borough Engineer and Surveyor, Town Hall, Mitcham, to whom applications must be forwarded endorsed "Architectural Assistant" by first post on November 17th, 1955.

R. H. WHITE,
Town Clerk.

Town Hall,
Mitcham, Surrey.
October 27th, 1955. [1675]

MINISTRY OF WORKS require ARCHITECTURAL ASSISTANTS for drawing offices in London, Edinburgh and various provincial offices, with at least 3 years' training, experience in an architect's office and of Inter R.I.B.A. standard. London salary £463 to £725 p.a., elsewhere slightly less. Starting pay according to age and experience. Prospects of promotion and permanency. State age details of training and experience to Chief Architect, Ministry of Works, A 27 (G), Abell House, John Islip Street, London, S.W.1. [1618]

APPOINTMENTS—contd.

URBAN DISTRICT COUNCIL OF CORBY

Appointment of (a) Senior Quantity Surveyor.
(b) Architectural Assistant.

APPLICATIONS are invited for the following appointments in the department of the Engineer and Surveyor:

- (a) SENIOR QUANTITY SURVEYOR:
Grade A.P.T. VI (£825 x 35/5) - £1,000 commencing at £825 per annum.
- (b) ARCHITECTURAL ASSISTANT:
Grade A.P.T. III (£600 x 25/5) - £725 commencing at £600 per annum.

The immediate building programme includes schemes for a Public Hall, covered Swimming Bath and Cafe, Cemetery Chapel and adjoining Staff House, in addition to Housing Contracts.

Housing accommodation will be made available to the successful candidates (if married).

Applicants for appointment (a) must have passed the final R.I.C.S. (Quantities Section) examination and be experienced in the preparation of Bills of Quantities, and adjustment of Variations and settlement of final accounts. Previous experience of substantial Contracts for local authority housing is desirable.

Applicants for appointment (b) must have passed the R.I.B.A. intermediate examination or its equivalent at a recognised School of Architecture, and have had at least two years' experience in an Architect's Office (exclusive of pupils). Preference will be given to applicants who have reached an advanced stage in preparing for the Final Examination and who have had testimonials of study accepted. A contemporary outlook and all round general experience is desirable.

The provisions of the Local Government Superannuation Acts, 1937-1953, will apply to these appointments.

Forms of application may be obtained from the undersigned to whom they should be returned not later than the first post on Thursday, November 17th, 1955.

Testimonials will be required only from applicants selected for interview.

G. B. BLACKALL,
Clerk of the Council.

Council Offices,
Corby, Northants.
October 18th, 1955. [1672]

FEDERATION OF RHODESIA AND NYASALAND

VACANCIES: ARCHITECTS, ASSISTANT ARCHITECTS, ASSISTANT QUANTITY SURVEYORS: FEDERAL PUBLIC WORKS DEPARTMENT: MINISTRY OF COMMERCE AND INDUSTRY.

ARCHITECTS: Applicants, under 45, must hold A.R.I.B.A. or equivalent. Starting salary, £1,650 p.a. on scale rising to £1,800 p.a.

ASSISTANT ARCHITECTS: Applicants, under 35, must hold A.R.I.B.A. or equivalent. Starting salary £800 - £1,100 p.a., depending on qualifications and experience on scale rising to £1,600 p.a.

DUTIES: Successful applicants for both posts will be engaged on the design and preparation of working drawings for Government buildings, schools, hospitals, post offices, police stations, etc.

ASSISTANT QUANTITY SURVEYORS: Applicants, under 35, must hold A.R.I.C.S. (Quantities) or a University diploma giving exemption therefrom. Starting salary and scale as for Assistant Architects.

DUTIES: Include taking off, preparing Bills of Quantity for all types of public buildings, including measurement and valuation of builders accounts.

Successful applicants for all posts, which are permanent and pensionable, will probably be stationed in Salisbury or Bulawayo but are liable to serve anywhere in the Federation.

Applications, giving age, qualifications, experience, marital status, together with the names and addresses of two referees, should be sent, in DUPLICATE, to the Secretary, Rhodesia House, 429, Strand, London, W.C.2. Closing date October 29th, 1955. [1679]

ASSISTANT Quantity Surveyor required for Property Department of Lanark County Council at Motherwell. J.I.C. salary scale A.P.T. Grade VIII (£840-£915). Must have passed Final Examination of R.I.C.S. and have had practical experience in the preparation of estimates and Schedules of Quantities, measuring up and checking of final accounts of all trades.

Superannuation. Medical examination. No canvassing.

Applications stating age, qualifications and experience, together with names and addresses of three referees to be lodged with the County Clerk, P.O. Box No. 1, Glasgow, not later than 12th November, 1955. [1688]

APPOINTMENTS—contd.

MANCHESTER CITY ARCHITECTS' DEPARTMENT

APPLICATIONS are invited for the following appointments on the permanent staff:

- (a) SENIOR ASSISTANT ARCHITECT. Salary A.P.T. Grade IV £675-£825 per annum. Applicants must be A.R.I.B.A. with some years' office experience. [1605]
- (b) ARCHITECTURAL ASSISTANT. Salary Basic Grade £650-£775 per annum. Applicants must have passed parts 1 and 2 of the R.I.B.A. Final examination or its equivalent and have had at least five years' experience including the period spent in theoretical training. [1606]
- (c) ARCHITECTURAL ASSISTANT. Salary A.P.T. Grade II £560-£640 per annum. Applicants must have passed the Intermediate examination of the R.I.B.A. or its equivalent. [1607]
- (d) TECHNICAL ASSISTANT / DRAUGHTSMAN. Salary A.P.T. Grade II £560-£640 per annum. Applicants should be experienced in the design and detailing of all types of school furniture. [1608]
- (e) STRUCTURAL ENGINEERING ASSISTANT. Salary A.P.T. Grades I/II £500-£640 per annum. Applicants must be experienced in the design of structural steelwork and reinforced concrete. [1609]
- (f) ASSISTANT HEATING, VENTILATING AND MECHANICAL ENGINEER. Salary Basic Grade £650-£775 per annum. Applicants should be experienced in the design of heating and ventilating installations. [1610]
- (g) ASSISTANT HEATING, ETC., ENGINEER. Salary A.P.T. Grades I/II £500-£640 per annum. Applicants should be experienced in the design of heating installations. [1611]
- (h) SENIOR ASSISTANT QUANTITY SURVEYOR. Salary A.P.T. Grade IV £675-£825 per annum. Applicants must have had considerable experience in the preparation of Bills of Materials and Specifications, Interim Valuations and settlement of final accounts for all classes of local authority building work. Further particulars and forms of application may be obtained from the City Architect, Box No. 488, Town Hall, Manchester, 2. The completed form to be returned to the same address by November 12, 1955. Canvassing is prohibited. [1690]

NORTH THAMES GAS BOARD

AN ARCHITECTURAL ASSISTANT is required in the Drawing Office of the Chief Engineer's Department, Westminster.

Applicants should have passed the R.I.B.A. Final Examination, should be capable of preparing working drawings and specifications, and supervising the work on contracts. Experience in design and planning of industrial buildings would be an advantage.

Starting salary, depending on age and qualifications, will be within the range £650-£770 per annum, and the successful candidate will be required to join the Staff Pension Scheme.

Applications to the Staff Controller, North Thames Gas Board, 30 Kensington Church Street, London, W.8, quoting reference 666/278. [1691]

LONDON COUNTY COUNCIL

ARCHITECTS' DEPARTMENT

VACANCIES for Architects Grade III (up to £945), and Architectural Assistants (up to £783), for widespread construction programme which includes houses, blocks of flats, schools of all types, and various public and industrial buildings. —Application forms and particulars from Architect, (AR/EA/33), The County Hall, S.E.1. [1189] [1606]

KENT COUNTY COUNCIL requires a SENIOR PLANNING ASSISTANT in the Planning Department at a salary within the grade £600-£825 per annum (Salary grade under review and likely to be £675-£900 as from 1/4/56).

Candidates should be A.M.T.P.I. or alternatively must possess an appropriate degree or diploma. Experience in development control will be an advantage. National Scheme of Conditions of Service applies and registered disabled persons will be considered.

Applications, together with the names of two referees must reach the County Planning Officer, County Hall, Maidstone, not later than the 22nd November, 1955. [1689]

ARCHITECTURAL APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc. If the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is exempted from the provisions of The Notification of Vacancies Order, 1952.

ARCHITECTURAL Junior Assistant required. Should have two years' experience on large commercial and industrial projects. Salary according to experience.—Box 7107, c/o A. & B.N. [1661]

ARCHITECTURAL APPOINTMENTS VACANT—contd.

ARCHITECTURAL Assistants required, from 2nd year to Intermediate Standard R.I.B.A. for Housing and Estate work in West End office. Salary £100 to £450 p.a., according to qualifications and experience. Good prospects for advancement.—Apply Mr. Young, Percy Bolton Ltd., 113 Park Street, London, W.1. Tel. Mayfair 8240. [1635]

ASSISTANT required in busy practice in West End, in early twenties, about intermediate R.I.B.A. standard; excellent opportunities for gaining all round experience.—Box 385, c/o A. & B.N. [10636]

COMPETENT Architectural Assistants, all grades required immediately for Industrial and Housing Projects, in Yorkshire Architect's Office.

Write stating experience, qualification, when available and salary required. Walker & Colinson, Architects & Surveyors, 12, The Exchange, BRADFORD 1. [1660]

ARCHITECTS Co-partnership require unmarried, qualified, experienced assistant in their Lagos office. Maximum tour 14 months. Flat provided.—Write 44, Charlotte Street, London, W.1., or telephone Langham 5791. [10001]

ARCHITECTS' Co-partnership require qualified assistant with experience.—Write 44, Charlotte Street, London, W.1., or telephone Langham 5791. [10002]

ESTABLISHED firm of West End Architects have vacancies for all grades of Architectural Assistants qualified or unqualified in the salary range of £650-£1,000 according to experience and abilities. Varied work with opportunities for taking responsibility and supervising work in progress.—Box 7154 c/o A. & B.N. [1668]

ARCHITECT required for Far East, qualified man school and office trained with experience general rather than specialised.—Write full particulars Box 7159 c/o A. & B.N. [1670]

ARCHITECTURAL ASSISTANTS required, approaching or at Intermediate stage. Salary up to £500 per annum according to ability and experience.—D. Paskett Marshall, F.R.I.B.A., 89, Gordon Square, W.C.1. MUSEUM 7176/7. [1671]

ARCHITECT'S JUNIOR ASSISTANT with previous office experience required immediately. Varied and interesting work.—Apply, stating age, experience and salary required, to Arthur J. Penberthy, F.R.I.B.A., 74, Bath Road, Wolverhampton [10008]

S. T. WALKER and Partners require young, energetic and qualified staff within the salary range £650 - £1,000 per annum. The office is a busy one with many different types and sizes of projects. Five day week. Apply to 83, Suffolk Street, Birmingham 1, Midland 3682-3, giving a brief outline of experience. [1671]

ARCHITECTURAL ASSISTANTS (Two) of Intermediate to Final R.I.B.A. Standard required by Orman and Partners, Chartered Architects, for their Guildford Office. Salaries related to experience.—Apply, stating age and previous experience, to 23A, High Street, Guildford, Surrey. Telephone 67688-9. [1678]

ARCHITECTURAL Assistant required for large industrial concern in Edinburgh; preference will be given to applicant having experience in design and alterations to industrial type buildings and steel structures and also in foundation work for plant and special purpose buildings; only active first-class men need apply, 3 weeks' holiday plus 61 days per annum—all paid; superannuation scheme.—Box 7244 c/o A. & B.N. [1680]

ARCHITECTURAL assistance required, intermediate standard with some office experience. £450-£550 p.a.—Reply Box 7281 c/o A. & B.N. [1686]

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GOOD lettering is essential for commemorative wall tablets, foundation stones, etc. Designs prepared and estimates given for the finished work in any suitable material. Renowned as a centre for lettering since 1934. Sculptured Memorials, 67 Ebury Street, S.W.1. Sioane 6549. [10236]

MISCELLANEOUS SECTION

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PRESS DAY Monday. Remittances payable to Hiffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1.

No responsibility accepted for errors.

SITUATIONS VACANT

TECHNICAL REPRESENTATIVE aged 28.38, required for Newcastle area, by prominent Roofing Manufacturers and Contractors. The appointment offers excellent prospects with superannuation either to a man with architectural experience wishing to enter industry or to one who is accustomed to negotiating with architects, surveyors and engineers.—Please write giving details of age, education and business or professional experience to Box No. 7259 c/o A. & B.N. [1685]

SECRETARY required; good shorthand and typing speeds, knowledge of general office routine. Salary according to experience and qualifications. Hours 9 a.m. - 5.30 p.m.; no Saturdays.—Apply: Peter Lord Ltd., 177, Piccadilly, W.1. [1673]

IMPERIAL CHEMICAL INDUSTRIES LTD., WILTON WORKS, near Redcar, now has a vacancy for an ASSISTANT QUANTITY SURVEYOR able to measure to final account on Contracts, Civil Engineering and building work, taking off, abstracting and billing. Able to estimate and analyse rates and prices.

Excellent working conditions, Pension Fund, Profit Sharing Scheme and first class recreation facilities.

Out of pocket expenses are paid for applicants invited for interview and after joining the staff, married men will receive a refund of removal expenses up to £50 together with rail travel expenses. Schemes for assistance in housing are available, and for house purchase facilities exist for loans and advances for legal charges.

Write for application form to Staff Manager, Imperial Chemical Industries Limited, Wilton Works, Middlesbrough, quoting reference IC1/X 264/c. [1687]

FOR SALE

COTSWOLD Building Stone and Hardcore for sale at Fish Hill Quarry, Fish Hill, near Broadway, Worcs.

DELIVERED or collected from Quarry.

APPLY to: Bailie, Brind & Co., Ltd., Prudential Chambers, Banbury Oxon. [10087]

ALL hardwood mouldings, plain and embossed, embossed ornaments and dowels; send for catalogue and to-day's lowest trade prices.—Durev's Moulding Mills, Ltd., 60 Pownall Road, Dalston, E.8, CIsoid 1541/4. [10142]

JOINTLESS composition flooring in attractive colour range—quotations free.—Full particulars from the Lioter Asbestos Flooring Co., Ltd., 3, Corbett's Passage, London, S.E.16 (Dept. A), Bermondsey 4141-2-3. [10622]

RECONDITIONED ex-Army Hula & Manufactured Buildings, Timber, Asbestos, Nissen Type, Hall Type, etc. All sizes and prices. Write, call or telephone, Universal Supplies (Belvedere), Ltd., Crabtree Manorway, Belvedere, Kent, Tel.: Erith 2948. [10005]

TENDERS

COUNTY BOROUGH OF BRIGHTON

TENDERS are invited for the erection of:

17 FLATS and 17 MAISONNETTES in THREE 3-STORY BLOCKS AT ESSEX STREET, BRIGHTON.

Bills of Quantities and forms of tender may be obtained from the Borough Engineer and Surveyor, 26-30, King's Road, Brighton, on or after October 29th, 1955, on receipt of a returnable deposit of £2 2s.

Tenders are to be delivered to the Town Clerk not later than 12 noon on Tuesday, November 29th, 1955.

W. O. DODD,
Town Clerk [1676]

MISCELLANEOUS

SET 20 different bungalow plans (695-1,365 sq ft) or 20 house plans (985-1785) £2 2s per set. Both sets £3 3s.—HOME DESIGNS CO., Hassocks, Sussex. [1618]

DRAWING OFFICE MANAGER — 5 seconds to extract one drawing from amongst 1,000? 5 seconds to put it back into place? That is PLANSTORE. — Please write for literature to Randatrol Limited, 106, Victoria Street, S.W.1. [1677]

PLANT FOR HIRE

FOR HIRE. Ruston-Bucyrus EXCAVATORS, 18RB, 11RB, 22RB and 19RBs. Any equipment. A. E. FARR, LTD., Westbury, Wilts, Tel. 356. [10143]

INSURANCE

ARCHITECTS' Indemnity Insurance effected.—Please write for Proposal Form to E. J. SAXBY, Incorporated Insurance Broker, 37a, Carfax, Horsham, Sussex. Tel. 990. [1692]

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Official Notices, Tenders, Auctions, Legal and Miscellaneous Appointments on pages 44 and 45.

A.B.C.D. (Raynes Park) Ltd.	—	Crittall Manufacturing Co. Ltd.	—	Ibstock Brick & Tile Co. Ltd.	—	Ronuk Ltd.	—
Adam & Lane & New Ltd.	—	Crofield Ltd.	—	Imperial Chemical Industries Ltd.	—	Rubber Improvement Ltd.	—
Adams Ltd.	—	Crudens Ltd.	—	Johnson Bros. Ltd.	—	Rubroid Co. Ltd., The	—
Adams Hydraulics Ltd.	—	Cullum, H. W., & Co. Ltd.	—	Jones & Broadbent	—	Rubery Owen (Shorrocks Super-	35
Adams, Robert (Victor) Ltd.	—	Curfew Doors and Shutters Ltd.	—	Jones, T. C., & Co. Ltd.	—	chargers) Ltd.	—
Aerialite Ltd.	—	Cuthell, D. M., & Co. Ltd.	—	Kay & Co. (Engineers) Ltd.	37	Rudkin, S. O., & Co. Ltd.	31
Aldam Hill, E., & Co. Ltd.	—	Cutting, R. C.	—	Kay, Fredk. (Engineering) Ltd.	—	Runnymede Rubber Co. Ltd.	—
Allied Brick & Tile Works Ltd.	—	Dalton, Ballard & Co. Ltd.	—	Kemp, Wm. (Refrigeration) Ltd.	—	Sanders, Wm. & Co. (Wednes-	—
Allied Guilds	—	De La Rue, Thomas & Co. Ltd.	—	Kerner-Greenwood & Co. Ltd.	31	bury) Ltd.	—
Allied Ironfounders Ltd.	—	Dennison Kett & Co. Ltd.	—	King, J. A., & Co. Ltd.	—	Sankey, J. H., & Sons Ltd.	—
Ames Crosta Mills & Co. Ltd.	22	Denton Edwards Paint Ltd.	—	Kings Langley Eng. Co. Ltd.	—	Schaverien Sheet Metal & En-	—
Anderson, C. F. & Son, Ltd.	—	Dexion Ltd.	19	Kinnear Shutters	—	gineering Co. Ltd.	—
Armstrong Cork Co. Ltd.	1	Docker Bros.	—	Lacrinoid Products Ltd.	—	Secomast Ltd.	—
Ascot Gas Water Heaters Ltd.	—	Dodd Engineering Co. Ltd.	—	Laing, John, & Sons Ltd.	—	Semtex Ltd.	—
Associated Metal Works (Glas-	—	Doodson & Bain Ltd.	—	Lead Industries Development	—	Seaboard Lumber Sales Co. Ltd.	—
gow) Ltd.	—	Dove Bros. Ltd.	17	Liquitile Supply Co.	—	Sherrwood Floors Ltd.	—
Atlas Preservative Co. Ltd.	—	Dunlop & Ranken Ltd.	—	Le Bas Tube Co. Ltd.	—	Shutter Contractors Ltd.	40
Atlas Stone Co. Ltd.	—	Dunn, Alexander Ltd.	—	Libraco Ltd.	—	Sieglwart Floor Co. Ltd.	—
Automatic Pressings Ltd.	—	Durasteel Ltd.	—	Light Steelwork (1925) Ltd.	—	Simson, Thomas & Co. Ltd.	41
Avery, J. & Co. Ltd.	38	Duresco Products Ltd.	—	Lindsay's Paddington Iron Works	—	Sissons, W. & G. Ltd.	—
Baldwin, Son, & Co. Ltd.	—	Dussek Bitumen & Taroleum	—	(1948) Ltd.	—	S.M.D. Engineers Ltd.	—
Barry, Ostlere & Shepherd Ltd.	4	Ltd.	—	Lion Foundry Co. Ltd.	—	Smith, Henry, & Co. Ltd.	—
Bath & Portland Stone Firms	—	Dussek Bros. & Co. Ltd.	44	Liquitile Supply Co.	42	Smith, Samuel, & Sons Ltd.	—
Batley, E., Ltd.	—	Economic House Drainage Rpg.	—	Logical Fuel Storage Units.	—	Smith, Thomas & Sons Ltd.	—
Bawn, W. B., & Co. Ltd.	37	Co. Ltd., The	—	London Electric Firm Ltd.	21	Smith's Fireproof Floors Ltd.	—
Baxendale, & Co. Ltd.	—	Edson Swan Electric Co. Ltd.	—	London Brick Co. Ltd.	—	Solignum Ltd.	—
Benham & Sons Ltd.	—	The	—	Lumenated Ceilings Ltd.	—	Sommerfelds Ltd.	—
Berite Ltd.	I.F.C.	Eidelman, J.	—	Luxfer Ltd.	—	Soundproof Construction	31
Berry, J., & Sons	—	Electrolux (Model M.151)	—	MacAndrews & Forbes Ltd.	—	Southern Forge Ltd.	—
Berry Wiggins Ltd.	—	Elliott, Samuel, & Son (Reading)	—	Macarney Ltd.	—	Spartan Beams Ltd.	—
Beynon, T., & Co. Ltd.	O.B.C.	Ltd.	33	Maple & Co. Ltd.	—	Staedler, J. S. Ltd.	—
Black Sheathing Felt Campaign	—	Ellis, John, & Sons Ltd.	31	Margolis, M.	31	Standard Patent Glazing Co.	—
Blackwells & National Roofings,	—	Empire Stone Co. Ltd.	—	Margolis, S.	—	Ltd., The	—
Ltd.	—	Engert & Rolfe Ltd.	31	Marryat & Scott Ltd.	—	Stanley, W. F., & Co. Ltd.	—
Blackwell, Wyckham Ltd.	—	English Association, The	—	Masonite Ltd.	—	Steel Radiators Ltd.	—
Blackie Cabinet & Metal Works	—	Eso Petroleum Co. Ltd.	—	Masters & Andrews Ltd.	—	Steecon (Industrial Floors) Ltd.	—
Ltd., The	32	Ewart & Sons Ltd.	—	McCarthy, M., & Sons Ltd.	31	Steven, A. & P. Ltd.	—
Blundell-Spence & Co. Ltd.	—	Expandite Ltd.	—	Mather & Platt Ltd.	—	Stic B Paints Sales Ltd.	41
Bolton Gate Co. Ltd.	—	Faculty of Architects and Sur-	42	Mealing Bros. Ltd.	—	Stiltite Products Ltd.	40
Boot, Henry & Sons Ltd.	23	veyors, The	—	Medway Buildings & Supplies	—	Stramit Boards Ltd.	—
Bostwick Gate & Shutter Co.	—	Ltd.	—	Ltd.	—	Stuart's Granolithic Co. Ltd.	—
Ltd.	—	Falkirk Iron Co. Ltd., The	—	Mellowes and Co. Ltd.	—	Sugg, Wm., & Co. Ltd.	—
Bourner, F. H., & Co. (Engin-	—	Farmer, S. W., & Son Ltd.	—	Micklethwaite, W. H., & Co. Ltd.	32	Sun Insurance Office Ltd.	—
ers) Ltd.	—	Ferranti Ltd.	—	Minton Hollins Ltd.	—	Sundaala Board Co. Ltd.	—
Bor, C. W.	—	Fibreglass Ltd.	—	Moler Products Ltd.	—	Surflex Flooring Co.	—
Braby, F., & Co. Ltd.	—	Finch, B., & Co. Ltd.	24	Morris Singer Co.	—	Sussex Cement & Concrete Pro-	—
Bradford, F., & Co. Ltd.	—	Flavel, S., & Co. Ltd.	25	Mullen & Lumsden Ltd.	—	ducts	—
Brady, G. & Co. Ltd.	—	Flexaire Ltd.	—	Murex Welding Processes Ltd.	—	Synchronome Co. Ltd.	—
Brain-Arc Ltd.	—	Flexo Plywood Industries Ltd.	—	Nairn, Michael, & Co. Ltd.	—	Tarmac Ltd., Vinculum Dept.	—
Bratt, Colbran & Sons Ltd.	15	Frank, Charles	33	National Association of Master	—	Taylor Rustless Fittings Co. Ltd.	—
Briggs, Wm., & Sons Ltd.	—	Franki Compressed Pile Co. Ltd.	—	The	—	Teleflex Products Ltd.	—
British Aluminium Co. Ltd.	—	Freeman, Joseph, Sons & Co.	—	National Coal Board	—	Temperature Ltd.	43
British Bitumen Emulsions Ltd.	—	Ltd.	—	Newman, Wm., & Sons Ltd.	—	Templex Holdings Ltd.	—
British Constructional Steelwork	—	French, Thos., & Sons Ltd.	—	Neolite Ltd.	—	Teneplas Sales Ltd.	—
Association	—	Gardner, J., & Co. Ltd.	—	Nermid Ltd.	—	Terradura Flooring Co. Ltd.	—
British Ebonite Co. Ltd.	—	Gas Council	—	Norris, C. W., Ltd.	—	Thermacoust Ltd.	35
British Electrical Dev. Assoc.	—	Gaskell & Chambers Ltd.	—	Northern Organisation, The	—	Thermofare (G.B.)	—
British Electricity	—	General Electric Co. Ltd., The	—	Northern Polytechnic	—	Thom, J., Ltd.	—
British Hermasol Ltd.	—	Gibson, Arthur L., & Co. Ltd.	11	Norwood Steel Equipment (Lon-	—	Thompson, John, Beacon Win-	—
British Metal Window Manu-	—	Gimson, & Co. (Leicester) Ltd.	—	don) Ltd.	—	dows, Ltd.	—
facturing Assoc.	—	Glikstein, J., & Co. Ltd.	—	Nu-Swift Ltd.	—	Thorn, J., & Sons Ltd.	—
British Paints Ltd.	—	Gramsmann Iron Co. Ltd.	—	Odoni, A. A., & Co. Ltd.	—	Thorn Electrical Industries Ltd.	—
British Plaster Board (Manu-	16	Graham, Thos., & Sons Ltd.	—	Ordnance Survey, The	—	Thorn, A. G., Ltd.	42
facturing) Ltd.	—	Grange-Camelon Iron Co.	—	Ornamental Gate Co.	—	Thorton, William, & Sons Ltd.	33
British Plumber Ltd.	20	Granwood Flooring Co. Ltd.	—	Parker, Winder & Achurch Ltd.	—	Thorp, J. H.	—
British Reinforced Concrete En-	—	Gray, J. W., & Co. Ltd.	32	Parmiter, Hope & Sugden Ltd.	—	Timber Development Association	12
gineering Co. Ltd., The	—	Greenwood's & Airvac Ventilat-	—	Parsons, Thos., & Sons Ltd.	—	Tretol Ltd.	7
British Titan Products Co. Ltd.	—	ing Co. Ltd.	—	Partridge Wilson & Co. Ltd.	—	Trianco Ltd.	—
British Steel Structures Ltd.	—	Gulf Radiators Ltd.	—	Patent Glazing Conference, The	—	Troughton & Young (Lighting)	—
Bryce White & Co. Ltd.	—	Gummers Ltd.	—	Penfold Fencing & Engineering	—	Ltd.	13
Burn Bros. (London)	—	Hale & Hale Ltd.	—	Ltd.	—	True Flute Ltd.	32
Cafferata & Co. Ltd.	—	Hall, J. & E. Ltd.	—	Permafence Ltd.	42	Trussed Concrete Steel Co. Ltd.	—
Callow Rock Lime Co. Ltd., The	38	Hall & Kay Ltd.	—	Permanite Ltd.	—	Turner, Chas., & Son Ltd.	44
Carburendum Ltd.	—	Hallstead, James Ltd.	—	Petradene Ltd.	I.B.C.	Turners Asbestos Cement Co.	—
Carriacks (London) Ltd.	—	Hammond & Charness Ltd.	—	Philips Electrical Ltd.	27	Ltd.	—
Canada, Government of	—	Hangers Paints Ltd.	—	Pickering Bros. Ltd.	—	Twistell Reinforcement Ltd.	6
Cannon, W. & G., & Sons Ltd.	—	Harley Electromotives Ltd.	—	Pilkington Tiles Ltd.	29	Tyefords Ltd.	—
C. & P. Development Ltd.	—	Harvey, G. A., & Co. Ltd.	—	Pitman, Sir Isaac & Sons Ltd.	—	Tyrol Sales Ltd.	—
Cape Asbestos Co. Ltd., The	14	Haskins	—	Potter, F. W., & Soar Ltd.	—	Unique Balance Co. Ltd.	—
Carlisle Plaster & Cement Co.	—	Hathernware Ltd.	—	Proctor Bros. (Wireworks) Ltd.	—	United Merchants Ltd.	—
Ltd.	26	Hawkesley-SMD Ltd.	—	Purimachos Ltd.	39	United Paint Co. Ltd.	—
Celion Ltd.	—	Haywards Ltd.	—	Pyrotenax Ltd.	—	United Steel Companies Ltd.	—
Celotex Ltd.	33	Henley's W.T. Telegraph Works	22	Radiation Group Sales Ltd.	—	Vaporheat Ltd.	—
Cement Marketing Co. Ltd.	10	Co. Ltd.	—	Ragusa Asphalt Paving Co. Ltd.	—	Velcity Company Ltd., The	40
Chamberlin Weatherstrips Ltd.	34	Hewitt, F. & D. M., Ltd.	—	Raines & Porter Ltd.	38	Vulcanite Ltd.	—
Chase Products Engineering Ltd.	—	Heywood, W. H., & Co. Ltd.	—	Rainham Timber Eng. Co. Ltd.	—	Walker Crosswell & Co. Ltd.	—
Chatwood Safe & Engineering	—	High Duty Alloys Ltd.	—	Range Boilers Ltd.	—	Ward, Thos. W., Ltd.	—
Co. Ltd.	—	Hilger & Watts Ltd.	34	Rawlings Bros. Ltd.	43	Wesley Trading Co. Ltd.	—
Cheetham, A. J., Ltd.	—	Hills, Adam E., & Co. Ltd.	—	Redpath Brown	—	West, A., & Partners	—
Cheetham, H., & Co.	—	Hills, F., & Sons Ltd.	—	Reliable Plywood Co. Ltd.	—	West's Piling & Construction Co.	—
Chemical Buildings Products Ltd.	39	Hills (West Bromwich) Ltd.	—	Reparations-Dreyfus Ltd.	—	Ltd.	—
Chesterman, J. & Co. Ltd.	—	Hobourn Domestic Appliances	—	Reynolds, H. & L. Construction	—	Williams & Williams Ltd.	5
Churchouse, C. M., Ltd.	—	Ltd.	—	Ltd.	32	Williams, John & Sons (Bristol)	—
Clarke Eiland Engineering Co.	—	Holland & Hannen and Cubitts	—	Richardson & Starling Ltd.	—	Wood, Edward, & Co. Ltd.	—
Ltd.	9	Ltd.	—	Ringmer Building Works Ltd.	31	Woolaway Constructions Ltd.	8
Clark Hunt & Co. Ltd.	—	Holophane Ltd.	—	Roller Shutters Ltd.	—	Wormells, R. J., & T. Ltd.	—
Cloughton Bros. Ltd.	—	Holopast Ltd.	3	Rolyat Tank Co. Ltd.	—	Yale & Towne Manufacturing	—
Clement Bros., Haslemere, Ltd.	—	Home Fitting (G.B.)	—	—	—	Co.	—
Cloakroom Equipment Ltd.	—	Honeywell-Brown Ltd.	2	—	—	Yelsin Ltd.	—
Clyde Structural Iron Co. Ltd.	—	Hope, Henry, & Sons Ltd.	—	—	—	Yorkshire Copper Works Ltd.	—
Coal Utilisation Council	—	Horchkiss Engineers Ltd.	—	—	—	The	—
Colas Products (Sales) Ltd.	—	Humber Slate Co. Ltd.	—	—	—	Youngman, W. C., Ltd.	—
Colhurst Symons & Co. Ltd.	—	Hunter, Douglas, Holland (Luxa-	—	—	—	Zinc Development Association	—
Compactum Ltd.	—	flex)	—	—	—	—	—
Condurp Ltd.	—	—	—	—	—	—	—
Conex-Terna Ltd.	—	—	—	—	—	—	—
Cork Manufacturing Co. Ltd.	—	—	—	—	—	—	—
Costain, Richard, Ltd.	—	—	—	—	—	—	—
Cozens Ventilators Ltd.	—	—	—	—	—	—	—

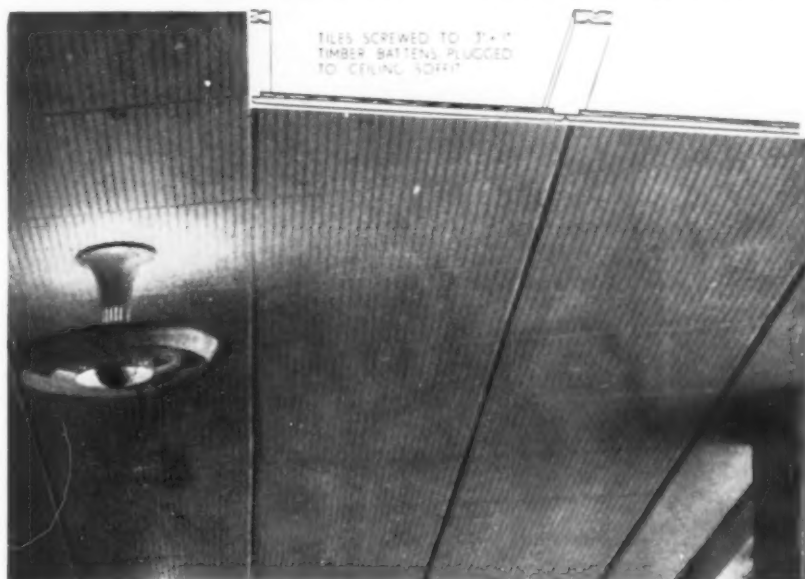
SUPACOUST

PERFORATED ACOUSTIC TILE

"SUPACOUST" tiles are manufactured from "Superplaster" (a fine Gypsum plaster admixed with "Superite" the plaster hardener).

"SUPACOUST" tiles combine high sound absorption with all the advantages of the plaster panels.

- EXCELLENT ACOUSTICS
- BEAUTIFUL DECORATIVE FINISH
- SIMPLE FIXING
- HYGIENIC SURFACE
- NON-COMBUSTIBLE



Typical Installation of "Supacoust" Tiles

Performance

Frequency (Cycles per second)	125	250	320	400	500	1000	2000	4000
SUPACOUST TILE with glassfibre quilt backing fixed on timber battens	0.25	0.55	0.65	0.65	0.60	0.35	0.25	0.20
SUPACOUST TILE with 1in wood wool backing	0.10	0.30	0.45	0.55	0.60	0.30	0.40	0.25
SUPACOUST TILE fixed direct on plaster board	0.15	0.10	*	*	0.20	0.35	0.50	0.60
SUPACOUST TILE left open at back	0.90	0.35	*	*	0.75	0.60	0.15	0.25

* Not tested at this frequency.

Sizes

Standards (supplied from stock)	24in x 24in x $\frac{5}{8}$ in	24in x 12in x $\frac{5}{8}$ in	30in x 15in x $\frac{5}{8}$ in
	Other sizes to specification.		

Weight

Standard Tiles: 2½lb per sq. ft.

If Vermiculite Plaster is used: 1½ — 2lb per sq. ft.

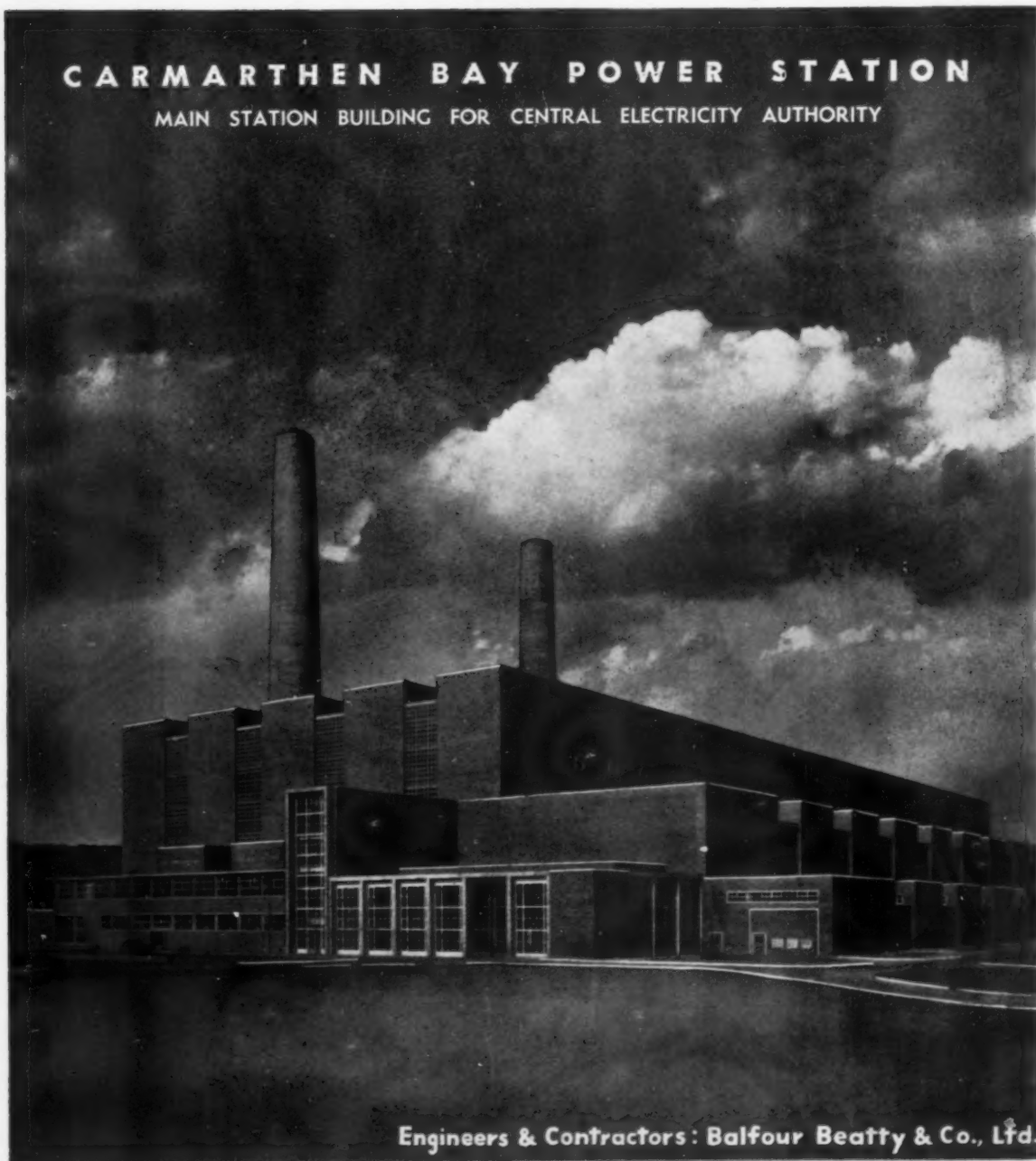
"Supacoust" tiles can be fixed to any surface by screwing. It is normal to fix only at the corners so that support for the standard panels is required only at 2ft 0in centres of say, 3in x 1in timber battens. Quotations will be gladly given for either (a) Supply to the Site only, for fixing by the General Contractor, or (b) Supply and fixing as a Subcontract.

PETRADENE LTD.

23-39 BENDON VALLEY, GARRATT LANE,
LONDON, S.W.18 Tel. BAttersea 2497 8/9

CARMARTHEN BAY POWER STATION

MAIN STATION BUILDING FOR CENTRAL ELECTRICITY AUTHORITY



Engineers & Contractors: Balfour Beatty & Co., Ltd.

ABERTHAW

THE RELIABLE  PORTLAND CEMENT

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BEVIS MARKS, E.C.3

Grams: Beynon, Fen, London Phone: Avenue 2869